FAMILY CHARACTERISTICS, VALUES, AND EDUCATIONAL PLANS: A STUDY OF NEWFOUNDLAND YOUTH

CENTRE FOR NEWFOUNDLAND STUDIES

TOTAL OF 10 PAGES ONLY
MAY BE XEROXED

(Without Author's Permission)

MARGUERITE BAKER

11175


CENTRE FOR NFLD. STUDIES
OCT 16 1979
MEMORIAL UNIVERSITY
OF NEWFOUNDLAND

National Library of Canada

Cataloguing Branch
Canadian Theses Division

Ottawa, Canada
K1A 0N4

Bibliothèque nationale du Canada

Direction du catalogage
Division des thèses canadiennes

NOTICE

The quality of this microfiche is heavily dependent upon the quality of the original thesis submitted for microfilming. Every effort has been made to ensure the highest quality of reproduction possible.

If pages are missing, contact the university which granted the degree.

Some pages may have indistinct print especially if the original pages were typed with a poor typewriter ribbon or if the university sent us a poor photocopy.

Previously copyrighted materials (journal articles, published tests, etc.) are not filmed.

Reproduction in full or in part of this film is governed by the Canadian Copyright Act, R.S.C. 1970, c. C-30. Please read the authorization forms which accompany this thesis.

AVIS

La qualité de cette microfiche dépend grandement de la qualité de la thèse soumise au microfilmage. Nous avons tout fait pour assurer une qualité supérieure de reproduction.

S'il manque des pages, veuillez communiquer avec l'université qui a conféré le grade.

La qualité d'impression de certaines pages peut laisser à désirer, surtout si les pages originales ont été dactylographiées à l'aide d'un ruban usé ou si l'université nous a fait parvenir une photocopie de mauvaise qualité.

Les documents qui font déjà l'objet d'un droit d'auteur (articles de revue, examens publiés, etc.) ne sont pas microfilmés.

La reproduction, même partielle, de ce microfilm est soumise à la Loi canadienne sur le droit d'auteur, SRC 1970, c. C-30. Veuillez prendre connaissance des formules d'autorisation qui accompagnent cette thèse.

THIS DISSERTATION
HAS BEEN MICROFILMED
EXACTLY AS RECEIVED

LA THÈSE A ÉTÉ
MICROFILMÉE TELLE QUE
NOUS L'AVONS REÇUE

NL-339 (3/77)

FAMILY CHARACTERISTICS, VALUES, AND EDUCATIONAL PLANS: A STUDY OF NEWFOUNDLAND YOUTH

A Thesis Presented to the
Department of Educational Foundations
Memorial University of Newfoundland

Submitted in Partial Fulfillment
of the Requirements for the Degree
Master of Education

by
Marguerite Baker, B.A., B.Ed.
©
May 1978

ABSTRACT

The present study examined how selected family characteristics intervene through parental value orientations to influence children's educational plans. A sample of 38 Newfoundland secondary schools, involving 3315 females and 3500 males in Grades 9, 10, 11, 12 and vocational schools, was employed. The effects of the following seven family characteristics upon children's educational plans were analyzed by the method of multiple regression and path analysis: father's education, mother's education, father's occupation, mother's occupational status, parental presence, family size, and child's IQ. The three intervening value orientations were parental awareness, parental encouragement, and parental decision-making.

Nineteen per cent of the variance was explained in the educational plans of males, and 20 per cent of the variance in the educational plans of females. For males, the independent variables in order of their effects upon educational plans from high to low were: child's IQ, family size, mother's education, father's education, father's occupation, parental presence, and mother's occupational status. Of the three intervening variables examined, parental encouragement was the most important, parental awareness was less important, and parental decision-making was the least

important. For females, the independent variables in order of their effects upon educational plans from high to low were: child's IQ, mother's education, father's occupation, family size, father's education, parental presence, and mother's occupational status. Of the three intervening variables parental encouragement was the most important, parental awareness was less important, and parental decision-making was of least importance.

These findings have implications for the importance of educating mothers, for males in one-parent families, for the differential treatment of males and females in the home and school, and for the importance of parental encouragement and parental involvement in the educational process.

Suggestions for further research concerned the sample, the method of analysis, and the measurement of the variables.

ACKNOWLEDGEMENT

The author wishes to acknowledge the guidance received from Dr. Rodney Clifton, who was generous with both his professional knowledge and time.

TABLE OF CONTENTS

LIST OF TABLES

Page

LIST OF FIGURES

CHAPTER 1

INTRODUCTION TO THE STUDY

THE PROBLEM

One of the goals of virtually all modern nations is to provide equal access to educational institutions for any member of its population who has the ability to succeed in the system. This perspective argues that the opportunity for receiving an education, which a modern society uses in distributing valued rewards, must be equalized for every member of that society. In this respect, the Association of Atlantic Universities has noted that:

> The greatness of any nation or region depends upon its aims and purposes, its cultural and scientific endowment, its aspirations, and its commitment to excellence in all aspects of life. These can only be as great as the individuals who make up the nation. Equality of opportunity, then - to enable our citizens to achieve their full potential - is vital. (Crean et al., 1969:88).

In order to attain equality of educational opportunity, background characteristics which may impede individuals from setting realistic educational goals, must first be identified. Sauvy (1973:53) concluded in his book, Access to Education: New Possibilities, that "the specific remedy for inequality would be to abolish the family ..." However, since the dissolution of this ancient and important

institution is not envisaged, another approach may be taken. The characteristics of the family which affect children's educational plans may be identified and programs of modification may be instituted where needed. That is, when certain family characteristics are identified as impediments to children's educational growth, programs of information and assistance may be initiated to provide compensation. Similarly, when other family characteristics are identified as aids to children's educational growth, programs may be initiated for the advancement and encouragement of such traits.

In fact, a number of research studies have attempted to identify familial factors which affect children's educational aspirations and plans. The effects of parental education and occupation, parental presence, family size, and children's IQs upon educational plans, have frequently been examined. A number of investigators, for instance, have found that the parental educational level is an important variable influencing educational plans of children. Children who have highly educated parents are more likely to plan on higher education than are children who have poorly educated parents (Hood, 1967; Hutner, 1972; Tseng, 1972). Furthermore, it has been found that children tend to have expectations consistent with the educational level of the same-sex parent (Osborn, 1971; Treiman and Terrell, 1975). This may be explained in terms of socialization, through which boys come to identify with their fathers, and

girls with their mothers.

Similarly, many investigators have found that father's occupation, as an index of socioeconomic status, is also an important determinant of children's educational plans; that is, children whose fathers have high socioeconomic status occupations are more likely to aspire to post-secondary education than children whose fathers have low socioeconomic status occupations (Bennett and Gist, 1964; Breton, 1972; Pavalko and Bishop, 1966; Schwarzweller and Lyson, 1974).

In addition, whether the mother works inside or outside the home may also be influential. Both Hoffman (1974) and Etaugh (1974) did extensive reviews of the research in this area, but were unable to come to definite conclusions on the general effects of mother's occupational status. As they also found a lack of specific research into the relationship between mother's occupational status and her children's educational plans and, as increasing numbers of mothers are assuming occupations outside the home, this variable at least warrants further research.

Furthermore, whether one or two parents are present in the home may be of consequence in the setting of educational goals. However, there is a serious neglect of studies on the effects of maternal absence from the home, and studies of parental absence have produced conflicting results. For instance, Atkinson and Ogston (1974) found no differences between the behavior of young and adolescent male children from homes without fathers, and comparable groups of children

from homes with both mothers and fathers, while the findings of Jackson et al. (1974) indicated that father absence may detrimentally affect the educational goals towards which male children aspire. Thus, further study of the parental presence variable is important.

Studies of both family size and of children's IQs have established significant relationships between these variables and educational plans. Family size studies have consistently found negative relationships between family size and educational plans (Lal Chopra, 1966; Parsons and Parsons; 1976; Rosen, 1961). That is, the children in large families are not as likely to have high educational aspirations as are the children in smaller families. This may be explained in terms of two factors, less monetary resources and less time resources being available for each child. Furthermore, studies of children's IQs have frequently provided empirical support for the existence of a positive relationship between children's IQs and their access to higher education. It is not surprising that children with more ability show higher aspirations than children with less ability.

Thus, in summary, it is generally accepted that parental education and occupation, parental presence, family size, and children's IQs all have effects upon children's educational plans. However, still relatively little is known about exactly why this is the case. It is a major hypothesis of this study that certain value orientations, associated with these family characteristics, affect parents'

behavior towards their children and, in turn, their children's behavior. In essence, certain value orientations mediate between parental education and occupation, parental presence, family size, and children's IQs, and children's educational plans (see Kerchoff, 1972; Kohn, 1969; Wright and Wright, 1976). It is possible that these value orientations are manifested in the level of awareness of children's schoolwork shown by parents, in the encouragement to set high educational goals shown by parents, and in parents' patterns of decision-making. For example, a parent who has attained a low educational level may not strongly value education, and thus, may not impress educational values upon his or her children by showing an interest in their schoolwork, or by encouraging them to aspire towards high educational goals. The present research proposes to study the effects of such value orientations and how these orientations mediate between selected family characteristics and educational plans.

SIGNIFICANCE OF THE STUDY

There are a number of aspects of this study which may make it important. First, few, if any, researchers have examined these relationships before. To be sure, researchers have examined the direct effects of parental education and occupation, parental presence, family size, and children's IQs upon educational plans (see, for example, Bennett and Gist, 1964; Cohen, 1965; Hood, 1967; Jackson et al., 1974;

Prenter and Stewart, 1972), but the present study extends the research by examining the possible mediating effects which value orientations may have. This study examines how parental values, as manifested in parental awareness of their children's schoolwork, parental encouragement to set high educational goals, and conjugal decision-making patterns, may intervene between these selected family characteristics and educational plans.

Second, not only has the study of these important mediated relationships been neglected, but the study of direct relationships between some of the independent variables and educational plans has not received adequate attention. For instance, there is a serious deficit in the literature of research into the effects of mother's occupational status upon male children. Furthermore, studies of the effects of parental awareness of their children's schoolwork and of parental decision-making patterns have been few and inconclusive. The present study will extend the research in these areas which often have been overlooked.

Third, it is significant that the data used in the present study was collected from Newfoundland youth. Newfoundland is quite distinctive among the Canadian provinces on a number of familial characteristics. According to the 1971 Canadian census, for example, the average number of children in a Newfoundland family is 2.4, compared with the Canadian average of 1.7 (Statistics Canada, 1973:55-2). Also, the average salary in Newfoundland, based on that of

the household head, is $5732, which is considerably lower than the average Canadian salary of $7598 (Statistics Canada, 1973:57-1). It may be that, in Newfoundland, the relationships between selected family characteristics, values, and educational plans, are magnified. Thus, it may not be possible to generalize from studies conducted in other provinces or other countries to Newfoundland. Because few investigators have studied the educational plans of Newfoundland youth (see, for example, Long, 1972; Parsons, 1974; Tilley, 1975), it is proposed that this study may make a significant contribution by adding to the body of knowledge on which Newfoundland administrators, teachers, counsellors, and parents base their educational decisions.

Fourth, from a practical point of view, it is noteworthy that the literature has indicated that value orientations associated with parental education and occupation, parental presence, family size, and children's IQs may be modified through counselling programs (Champagne and Goldman, 1972; Gordon, 1973; Patterson and Gullion, 1974). If these value orientations do, as hypothesized in the present study, influence behavior in the family, and subsequently, educational plans, then the disadvantages of certain family characteristics may be overcome by modifying these intervening variables through family counselling.

Fifth, the data of this study is analyzed by multiple regression analyses. This method allows the researcher to specify relationships, and indicates the size of the

relationships. It may be determined how much one independent variable affects the dependent variable, when other variables are held constant. Many previous studies in this area have employed techniques such as cross-tabular analysis (for example, Bennett and Gist, 1964; Elder and Bowerman, 1963; Shapiro, 1974) and analysis of variance (for example, Osborn, 1971; Tseng, 1972), which are less powerful and which provide less information than the multiple regression analyses.

Finally, this study is significant in that the 3,315 females and 3,500 males who compose the sample represented 28.04 per cent of the total Newfoundland secondary school enrollment of 24,664 (Breton, 1972:405). Not only is this a very large sample, but it may be a very representative sample of Newfoundland youth.

LIMITATIONS OF THE STUDY

This study may be limited in five aspects. The first limitation of the study may lie in the measurement of the variables. Because data which was previously collected by Breton (1972) is used, the present investigator did not design the questionnaire items. Consequently, some items may not be as precise measures as may be required for the present research. This limitation may be particularly applicable to the measurement of the intervening variable, parental encouragement.

Furthermore, it must be assumed that the construct 'value orientations' may be measured by three

indicators: parental awareness of their children's school-work, parental encouragement for their children to set high educational goals, and parental patterns of decision-making. While important studies such as Kohn's Class and Conformity (1969) have supported the perspective taken here, there have been few other quantifiable research efforts similar to this research, and thus, there are few other studies to support the validity of such indicators.

A second limitation of the present study is in the method of data collection. The use of questionnaires imposes limitations which are beyond the control of the present investigator. The reading comprehension ability of the child, his or her interpretation of each question, and the care with which the child answers each question, are factors which may not be controlled nor measured in a study of this type.

A third limiting aspect of the present study is that it combines data for various levels of secondary school students. This means that the degree to which grade nine, ten, eleven, twelve, and vocational school students are, respectively, affected by these family characteristics cannot be determined. This is a limitation because certain family characteristics may influence children differently at different points in time. It has been found, for instance, that family influences vary in intensity at various points in a child's life in relation to peer influences (McDill and Coleman, 1965). It is conceivable, then, that a grade

nine child may be more dependent on, and influenced by, his or her parents than would be a grade eleven child. The grade eleven child, on the other hand, may be more affected by his or her peer group in deciding upon educational plans. However, the types of value orientations which this study examines - parental awareness, encouragement, and decision-making - are probably consistent over the secondary school years. Preliminary analyses of the data, for instance, showed little variability within each grade level and little variability between grades for these value orientations.

A fourth limitation of the present study concerns the sample. While it is significant that the Newfoundland population is well represented, it is a limitation that the sample is confined to Newfoundland children. The sample does not adequately represent all Canadian children and, subsequently, the number of generalizations which may be made are limited. Furthermore, comparisons between provinces for these selected family characteristics may not be made on the basis of this study. However, further studies may be conducted in other provinces and their results compared with the results of the present study.

A final limitation of this study is that the data was collected over ten years ago. Many social and economic changes have occurred within the last decade, and data describing the situation at that time may not accurately describe the situation as it exists today. But, this is a persistent problem in large-scale research where it takes

a number of years to collect and analyse the data. For this reason, it is proposed that the study of the basic relationships between these variables is still quite valuable.

The above limitations may vary in how seriously each influences the findings of this study. Unfortunately, it is impossible to tell the degree to which each affects the findings, but it is assumed that these limitations are not severe enough to invalidate the study. As noted before, similar limitations have been acknowledged by others engaged in large scale research of this nature.

OVERVIEW OF THE STUDY

In Chapter 1 we have introduced the problem, significance, limitations, and present an overview of the study. The major problem under consideration is the effects of parental education, parental occupation, parental presence, family size, and children's IQs upon values in the family and, in turn, the effects of these values upon the educational plans of children. Data collected from Newfoundland youth are analyzed to study this problem.

In Chapter 2 a review of the related literature, and the theoretical model derived from the literature, are presented. Recent studies have indicated that parental awareness of their children's schoolwork, parental encouragement to set high educational goals, and parental patterns of decision-making, mediate the relationship between parental education, parental occupation, parental presence, family

size, and children's IQs and children's educational plans.

Chapter 3 contains three sections, a description of the sample, the measurement of the variables, the the type of analysis. Questionnaires and a mental ability test were completed by 6,815 Newfoundland secondary school students. From the data collected, the following independent variables were included: father's education, mother's education, father's occupation, mother's occupational status, parental presence, family size, and the child's IQ. Also, the following variables were examined for possible mediating effects: parental awareness, parental encouragement, and parental decision-making. Of course, the dependent variable was educational plans. The data was analyzed by the method of multiple regression and path analysis.

Chapter 4 presents and discusses the findings. In this chapter an attempt was made to relate the findings back to the theoretical perspectives which directed the study. The analyses supported the theoretical model, which is presented in Chapter 2, for both males and females.

Finally, Chapter 5 presents a summary of the study and a conclusion which contains some implications of the present study and suggestions for further research.

CHAPTER 2

REVIEW OF THE RELATED LITERATURE AND THE THEORETICAL MODEL

This chapter is composed of two sections. The first section presents a review of the literature related to the variables that are used in the present study. That is, research studies pertaining to selected family characteristics, values, and educational plans are reviewed. The second section presents an overview of the theoretical model which is derived from this literature. That is, a model is developed that reflects the major research findings regarding selected family characteristics, values, and educational plans. Moreover, this model is used as a basis for the analyses which are presented in Chapter 4.

REVIEW OF THE RELATED LITERATURE

This section reviews the related literature and is divided into five subsections. The subsections are identified as parental education, parental occupation, parental presence, family size, and intelligence quotients. Within each subsection, the relationship of an independent variable to the intervening variables and the dependent variable is discussed. The independent variables are selected family characteristics, including father's education, mother's education, father's

occupation, mother's occupational status, parental presence, family size and the child's IQ. The intervening variables are parental awareness, parental encouragement, and parental decision-making. Finally, the dependent variable is the educational plans of the child.

Parental Education

Research has indicated that there is definitely a relationship between parental educational level and children's educational plans. Hutner (1972), for example, found a strong positive correlation between the mother's educational attainment and the children's expected educational attainment. Moreover, Tseng (1972) found that drop-outs, as a group, had mothers and fathers with lower educational levels than those who completed high school. Hood's (1967) results suggested that family educational status is more highly related to plans to attend college than is family economic status. As well, parental education has been frequently used as a composite indicator of social class as, for example, in Rosen's (1961) study. In such cases, the relationship between social class and educational plans has been found to be positive.

These results suggest that parents who themselves have experienced the intrinsic and extrinsic rewards of higher education are more likely to value education and to encourage their children to set high educational goals. Porter et al. (1973), looking at the educational plans of

Ontario youth for post-secondary education, pointed out that better educated parents, unlike more poorly educated parents, encourage their children to take courses which will enable the children to go on to higher education. They also noted that better educated parents are more familiar with school programs. This indicates that not only do better educated parents provide more overt encouragement, but also that they are more aware of what their children are doing in school. Clausen (1968) described what the children of more poorly educated parents may experience:

> Under any system in which selection on the basis of performance takes place, the successful candidate is likely to be one who is aware of what he has to do and who has the ability, motivation, and support necessary to perform effectively. If parents are not in a position to appreciate fully the importance of particular academic performances or evaluations, they cannot prepare and assist their child, nor can they assess the adequacy of advice given the child by teachers or counsellors in the schools (Clausen, 1968:166).

One other example of the importance of parental education on the types of values found in the home, and the type of support provided for children, is found in the Royal Commission on the Status of Women Report. The Commission stated that "for most children, if their parents have been educated, school simply continues previous experiences" (Bird et al., 1970:211). The report noted, however, that for most Indian and Eskimo children, whose parents have not generally been educated in the formal educational system, and for whom the values of education are not as highly developed

as in the white middle class, school is a major disruption in their lives. One submission to the Royal Commission pointed out that these children "caught between one set of values at home and another at school, are seldom able to resolve the inconsistency and reject either their parents or the school, and often both" (Bird et al., 1970:211-212). The importance of parental awareness and encouragement of children's schoolwork was emphasized in the Commission's conclusion that "until the women of the north are involved in their children's schooling and in adult education programmes, they and their children will continue to suffer" (Bird et al., 1970:211).

Parental educational level may also have an influence upon the parental decision-making pattern. It may be that the more education one attains, the more critical one becomes (Clifton, 1975), and, if this is so, two equally educated parents may both value problem-solving and decision-making to the same degree. On the other hand, two less equally educated parents may tend to leave decision-making to the better educated spouse. The literature has suggested that, in some respects, an equalitarian conjugal pattern of decision-making may be beneficial to children. Bowerman and Bahr (1973), for example, found that there is higher identification with parents among children of equalitarian parents. The authors noted that "...the higher identification with equalitarian parents may result from lower levels of marital conflict; the decision-making process may be more likely to

entail exchange of views and clarification of principles that rationalize the values of the parents" (Bowerman and Bahr, 1973:376). If the children come to accept and believe in their parents' values, they may more readily internalize their parents' belief in the value of education. Furthermore, McCandless (1967) has also suggested that, in our culture, a relatively equalitarian balance between mother and father seems to be the optimum for successful socialization of children.

Another situation might be one in which there is discrepancy in the educational attainment of the parents, and the better educated parent retains most decision-making power. Unfortunately, no relevant research in this area could be found. As Bowerman and Bahr (1973) pointed out in their study, "with the emphasis in socialization research on ... parent-child interaction, the effect that conjugal interaction may have on the child has been given only cursory examination" (Bowerman and Bahr, 1973:366). However, if identification with a parent is considered an indicator of internalization of that parent's norms and values, it would seem that identification with the better educated parent, who has a greater potential for influence through his or her decision-making power, is desirable. Sewell and Shah (1968), for instance, reported that father's education has a slightly stronger effect than mother's education on perceived parental encouragement for males, although there is an equal effect for females. This is significant because it suggests like-sex

identification. In fact, Osborn (1971) found that students tended to have expectations consistent with the educational level of the same-sex parent, and Treiman and Terrell (1975) suggested like-sex modeling to explain their findings that the education of working females was more strongly affected by their mother's education, while father's education had a stronger effect on working males. Assuming there is significant like-sex modeling suggests that the interaction of parental education, parental decision-making, and the child's educational plans is an important interaction to study. If a society is to exist in which neither sex group has less chance for educational advancement, obstructions to such equality must be identified. If the parent of one sex usually has a lower level of educational attainment than the other parent, and is consequently less influential because of less decision-making power, a circular process could be operating in which the same-sex child aspires only as far as that parent's educational level.

In summary, the literature reviewed has seemed to indicate that the parental educational level may exert an important ameliational influence upon children's educational plans because of like-sex identification. It is still important to determine how it affects educational plans, and to what extent. With this in mind we turn to examining the effects of parental occupation.

Parental Occupation

Fathers' occupations, and whether or not children's mothers work outside the home, may also affect parental behavior towards their children and, ultimately, the children's behaviors. Consistently, in many studies, positive relationships between socioeconomic status, as defined by fathers' occupations, and the educational aspirations and/or plans of children have been found (Bennett and Gist, 1964; Schwarzweller and Lyson, 1974).

Similar to the effects of a father's education, a father's occupation may influence how much the father values education, and how he transmits this value to his children. The children of fathers who have working class occupations may have lower educational goals than the children of middle class fathers, because working class parents may not be as active in fostering behavior conducive to good school performance. Finlayson (1971), for instance, noted that middle class parents encourage the reading of books, studying rather than indulging in other activities, and thinking in the long-term rather than in the short-term. He pointed out that, unlike parents of working class backgrounds, middle class parents give such behaviors normative force, and regard such behavior as requirements for their children. Furthermore, as McCandless (1967:592) noted "our society is not organized to demonstrate to the lower-lower class child the virtues of hard work and self-discipline". He pointed out that while the lower class father can only look forward to continually

being at the mercy of the boss, the times, and the weather, no matter how diligently he performs his job, the middle class father can demonstrate that through diligence, night work, and thinking about his job over the week-end, he can get a raise or achieve promotion. For the lower class child, his failure to appreciate the virtues of diligence and future rewards may leave him psychologically removed from his middle class peers.

The literature thus has seemed to indicate that the higher on an occupational classification scale a father's occupation lies, the more likely the father is to value education, to encourage his children to aspire towards high educational goals, and to take an active interest in their schoolwork. Grotberg (1972) noted that as parents become involved in their children's schoolwork they can better foster their children's development and learning abilities. Subsequently, such children are more likely to aspire towards, and plan for, higher educational goals. Indeed, a child who has not acquired at home a high value orientation for education is not so likely to compete successfully with children among whom such a value is implicitly taken for granted.

Furthermore, it is plausible that a father's occupation, similar to parental education, may have a different effect on each sex. Fathers of different occupational backgrounds may differ in their outlooks. Fathers who maintain relatively higher prestige and higher salaried positions are more likely to deal with symbols, ideas, and

interpersonal relations, and may be more disposed towards discussion and promotion of the equality of the sexes. Fathers of working class backgrounds, on the other hand, maintain jobs which more likely entail the manipulation of things and are less likely to be exposed to such ideas. Consequently, the latter may be more likely to adhere to traditional role-playing which advocates the dominance of the male in the household, and which downgrades the value of higher education for women but places higher education in the males' domain. In support of this interpretation, Rabban (1950) found that boys and girls of the lower class become aware of their appropriate sex-role patterns earlier than their middle class peers and their preferences conform more closely to the male and female stereotypes. This idea was extended by Kagan and Moss (1962) who found that traits congruent with appropriate sex-typing are relatively stable from childhood to maturity. Also in support of this interpretation, Cohen and Hodges (1963), in studying workers from different class levels, found that lower blue-collar workers are more likely to indicate that they prefer familiar and routine events. Such a preference for a simplification of the experience world is also conducive to a preference for traditional role-playing of males and females.

Not only may fathers of working class backgrounds provide more encouragement to male children to attain higher educational goals than to female children, but consistent with stereotypic attitudes towards the sexes, such fathers

may encourage independence in their male children and may reinforce dependence in their female children. This is important because, as Baumrind and Black (1967) found, parental encouragement of independence relates to high achievement motivation, competence, and achievement behavior.

A father's occupation may also have an influence upon conjugal decision-making patterns in the family. The father who is the only partner working outside the home, or the father who maintains a relatively higher salaried, higher prestige occupation than his wife may be more inclined to assume the primary decision-making role. Children, perceiving such a situation, may come to regard the male as the dominant decision-maker and their own behavior may be affected by the father's values and behaviors. Consequently, the relationship between a father's occupation, the subsequent values which he holds, and, ultimately, his influence on his children and their educational plans, warrants extensive study.

With regard to mother's occupation, the literature differs from that on father's occupation. The literature generally has operated on the assumption that most fathers have some occupation in the working world. Literature pertaining to mothers, however, generally has examined whether or not, in fact, the mother does have an occupation outside the home, and how this affects the child.

Hoffman (1974) has extensively reviewed the literature concerning the effects of maternal employment on the child.

A major deficit which she found in the literature was that "a typical study deals with only two levels - the mother's employment status and a child characteristic. The many steps in between - family roles and interaction patterns, the child's perceptions ... are rarely mentioned" (Hoffman, 1974: 205). As noted earlier in this paper, research should not only attempt to establish a relationship, but should attempt to discover why the relationship exists, including an examination of what mediates between the independent and dependent variables. This study contends that the value orientations in a family, in which the mother works, differ from those of a family in which the mother is a full-time homemaker, and that such value orientations influence children's educational plans differently. As Smith and Grenier (1975: 51) pointed out, "parental values are translated into their behavior with their children, and if a group undergoes a value change, child-rearing techniques may also change". Because of their different experiences, working and non-working mothers may hold different values and may interact differently with their families.

Many studies have found maternal employment to be an important background variable for females in their desires and plans for attending college, and in their ambition for attaining higher career goals (see, Almquist and Angrist, 1971; Banducci, 1967; Ginzberg, 1971). Hoffman (1974:222) reasoned that one would expect females' college plans to be affected by maternal employment because "possibly, daughters,

modeling an active occupation-oriented mother would be more likely to seek college when their mothers worked". However, we maintain that modeling alone does not explain this relationship. An important consideration is that mothers may transmit certain values to their children which are different or more intense than those transmitted by non-working mothers. Furthermore these value transmissions, unlike modeling, may have an important influence on both males and females. Unfortunately, there has been a paucity of studies on the effects of maternal employment upon male children.

One important idea which a working mother may transmit to her children is how she feels about, or values, her work. If one mother values a mentally challenging job, she may encourage her children to attain a higher education and to seek a position which offers a mental challenge. On the other hand, if another mother resents an unstimulating job, she too may encourage her children to secure a higher education in order to qualify for a more interesting occupation. The working mother may be more aware of how instrumental education is in the attainment of, and upward mobility within, a job, than the mother whose working experiences are confined to the home. In support of this, Powell (1963) obtained longtitudinal achievement scores and maternal employment data for subjects at the ages of nine, ten, eleven, and twelve. The children of employed mothers showed higher achievement motivation at each level, although

this was significant only at age nine. It may be that the encouragement which employed mothers provide, increases their children's achievement motivations.

The mother whose skills lie in the homemaking field, and who is content and secure in her position, may transmit to her children the value of filling traditional sex roles. In such a case, the male children would probably be encouraged to make high educational plans commensurate with the traditional role of breadwinner, while the female children would probably be encouraged to lower educational plans in favour of pursuing the traditional role of homemaker. In support of this, it has been found that the children of working mothers are less likely to endorse a traditional or stereotypic view of women. Douvan (1963) found that the daughters of working women scored low on an index of traditional femininity. Hartley (1961) found that among elementary schoolchildren, the daughters of working mothers indicated more similarity in the participation of men and women. They saw women as less restricted to their homes and more active in the world outside. Vogel et al. (1970) had similar findings with male and female college students.

Literature on the relationship between whether or not the mother works outside the home, and her awareness of her children's schoolwork, could not be found. However, studies which indicated that maternal employment and children's IQ scores are positively related, were found. Woods (1972), in her study of fifth-graders, found that full-time employment

was associated with higher intelligence test scores as measured by the California Test of Mental Maturity. Rieber and Womack (1968), studying Negro, Latin American, and Anglo preschoolers, found that more of the children of working mothers fell in the highest quartile on the Peabody Picture Vocabulary Test. These findings may indicate that working mothers make an extra effort to provide stimulating environments for their children. Because they maintain a workload which often is in addition to that of the mother who stays at home, working mothers must be more organized in order to cope efficiently. They may strongly value routinized behavior and, subsequently, may help their children with schoolwork on a routinized basis. This may tend to make working mothers more aware of their children's schoolwork, and may cause the children to be more aware of parental interest. Furthermore, this type of organization confronts the child with an image of order, and may assist him or her in the comprehension and management of time, which are important for achieving educational goals.

In order to make higher educational plans, children must feel competent in decision-making and in their capabilities to succeed. There is some evidence that there may be sex differences in educational plans because of differing perceptions of self-competence. Farley (1974), for instance, provided evidence that, generally, women are more likely to downgrade female competence. Males, on the other hand, have been traditionally reared to value male competence. Baruch

(1972) examined maternal employment influences upon college women's attitudes towards competence. They used a technique which is frequently used. Subjects were presented a number of journal articles and asked to judge the quality of the articles. Half of the articles were randomly given male author names and half of the articles were given female author names. Baruch found that the daughters of employed mothers did not downgrade the articles of female authors as did the daughters of fulltime homemakers. Baruch concluded that "it is women whose mothers who have not worked who devalue feminine competence" (Baruch, 1972:37).

There may be differences between the conjugal pattern of decision-making in families where the mother works outside the home and families where the mother does not work outside the home, and this in turn may affect the degree to which female children value competency. If the working mother participates in the conjugal decision-making, daughters may perceive this and, consequently, may value competency. It may be that working mothers do participate in conjugal decision-making more often, because they have a broader experiential base from which to contribute. In support of this, one study commented that:

> It might be speculated that those mothers who worked outside the home were exposed to a wider range of experiences . . . the fact that the mothers spent their days in the outside world, so to speak, brought them into contact and verbal communication with other people ..." (Rieber and Womack, 1968:609).

Nevertheless, many conflicting research results still remain in this area. For example, in studying urban-rural differentials, Roy (1963) found that among rural high school children, those who had working mothers were more likely to plan to go to college, than were those who had non-working mothers; Roy also found that, in town, the children of working mothers were less likely to go to college. On the other hand, Nolan (1963) found no differences among rural elementary school children, but found differences at the high school level favoring the children of working mothers. Inconclusive results such as these indicate that research into the effects of maternal employment upon children's educational plans is an important area which must be extended.

Parental Presence

Very little research has examined the effects on children of having one parent present in the home, as compared with having two parents present. The research which has been done has usually studied the effects of father absence from the home. The present literature clearly reflects the imbalance in the literature. This imbalance not only points to a need for further research into the general effects of having one to two parents present, but the existing data do not even permit any decisive answers about the effects on children of father absence (Herzog and Sudia, 1968:177). Furthermore, with regard to the influence of parental presence

on the educational plans of children, well substantiated hypotheses cannot be made on the basis of the available studies. More studies of father absence have dealt with personality characteristics than with academic achievement, and more studies have concerned male children than female children (Greenstein, 1966; Hetherington, 1966). In addition to these deficits in the literature, many investigations into the effects of father absence have been based on samples of younger children (Bach, 1946; Barclay et al., 1972; Lynn and Sawrey, 1959; Tiller, 1959). There have been an insufficient number of studies at the high school level. In Newfoundland, for instance, 9.7 per cent of the families are one-parent families (Statistics Canada, 1973:64-3), and it is important to know approximately how many of these families have high school children, and how parental presence subsequently affects these children's educational plans.

In the review of the literature pertaining to parental presence it is assumed that the amount of parental interaction which a child would lose by having only a mother present in the home, is probably similar to the amount of interaction a child would lose by having only a father present. Assuming that most husbands and wives share somewhat similar relationships with their children, the experience of having only one parent present, whether the mother or father, should therefore be similar as it pertains to parental encouragement and awareness.

A number of studies have indicated that father absence may detrimentally affect the level of educational goals towards which male children may aspire. Jackson et al. (1974), for instance, compared the post high school plans of adolescent males with the adequacy of father identification. The data indicated that high identification male subjects had higher levels of aspiration, more self-confidence, and greater satisfaction with school experiences. The authors stated that

> ... the clinical experience of the senior author has suggested that adolescent males reared in homes with inadequate or absent fathers were likely to have learning problems, poor study habits, and be academic under-achievers unless they transferred this identification to some other appropriate male (Jackson et al., 1974:86).

These findings were consistent with those of Sciara and Jantz (1974).

However, the literature has been contradictory. Unlike Jackson et al. (1974), Atkinson and Ogston (1974) found no differences between the behavior of young and adolescent male children from homes without fathers, and comparable groups of children from intact homes. The children's behavior in the home, school, and away from these institutions, were assessed through questionnaires completed by the children's teachers and mothers, and by themselves. Of particular note is that the children were judged by their teachers to perform as well academically as the control group. The authors reported that

> ... in general, the behavior of children with and without fathers is not appreciably different except that parental disciplinary behavior may vary as a function of the father's absence (Atkinson and Ogston, 1974: 213).

Biller (1971) suggested that the nature of the interaction between the mother and her son may be a more salient factor in the development of the child than the absence of a father. In particular, the type of reward which mothers offer their children for the completion of schoolwork may be an important factor. Mischel (1961a) found that a significantly larger proportion of both male and female children, from father-absent homes preferred immediate and smaller rewards, to delayed but larger rewards, when compared with children from intact homes. In another study, Mischel (1961b) found that a preference for delayed reinforcement is positively related to the strength of the child's need for achievement. The mother, in a father-absent home, must bear the responsibilities and pressures normally shared by two. These additional burdens may result in the mother taking a more impetuous attitude towards reinforcing desirable behaviors in her children. She may feel that the reward may be forgotten in the midst of tomorrow's problems, or she may be so concerned with filling the parental role adequately that she may be over-anxious to provide prompt, ample reinforcement. Thus, while the mother may be aware of her children's schoolwork, she may be inclined to immediately reward any school achievement, without really encouraging

her children to do even better for a greater reward. Ultimately, the children may learn to prefer immediate rewards, and may be satisfied with just acceptable schoolwork, rather than with excellent schoolwork. Both attitudes are detrimental to the setting of high educational goals. Furthermore, it may be that this sort of situation might exist in any home where the one parent present - either mother or father - must bear the burdens of two parents.

In order to examine possible mediating variables through which father's presence or absence exercises its influence upon the development of the child, Marsella et al. (1974) studied maternal attitudes under conditions of father presence and father absence. The Parental Attitude Research Instrument was administered to wives of nuclear submarine personnel under counterbalanced conditions of father presence and absence. It was found that "there is more breaking the will, strictness, intrusiveness, and acceleration of development (all maternal domination) when the father is present" (Marsella et al., 1974:257). This suggests that mothers in father-absent homes may be more lenient with their children. It may be that with a single parent making the family decisions, the tension which derives from trying to reconcile the views of two partners is alleviated. The parent thus may feel capable and secure in his or her role and may transmit this feeling of, and value of, competence to the children. The parent may not feel a need to be quite as strict, and the children may feel greater self-worth as a

result. This self-worth may be desirable for setting high educational goals.

One interesting study incorporates a discussion of maternal employment coupled with paternal absence. Fogarty et al. (1971:142), in their book, Sex, Career and Family, noted that

> ...recent research lays increasing stress on the role of the father for both boys and girls, but, for boys in particular. Where a mother's work appears to be damaging to the boys in her family, the right diagnosis may be that the root of the damage is not the mother's work but the absence of the father or his inadequacy in his role either in the family or in his job. A father's absence ... may lead among other things, to overdependence on the mother ...

This suggestion is supported by the findings of Barclay et al. (1972), who found that in comparison with father-present elementary school children, father-absent children were rated by their teachers as considerably handicapped in their own self-estimate of skills. In addition, teachers almost universally expected less personal effort and work from these children. Such poor self-concepts could result from over-dependence on one parent who lacks the time to encourage independence. A poor self-concept may lead to lowered educational goals.

Family Size

Negative relationships have consistently been found between family size and educational plans (Lal Chopra, 1966; Parsons and Parsons, 1976; Prenter and Stewart, 1972; Turner,

1962; Rosen, 1961). Rosen (1961:574) pointed out that

> . considering the sociologist's traditional and continuing concern with group size as an independent variable ... there have been surprisingly few studies of the influence of size upon the nature of interactions in the family.

This remains true even though evidence has suggested the importance of family size as a variable affecting the socialization process, and subsequently, achievement motivation (Bossard and Boll, 1955).

Parental encouragement has been recognized as an important variable influencing educational plans. Cherry (1974), for example, reported on a British longitudinal study of 5,362 people who were followed from birth in 1946 to 1971. The study found that parental promotion of secondary education was a critical determinant of their children's educational achievement. There are some indications that parental encouragement may act as one mediating variable between family size and educational plans. Rehberg and Westby (1967) found that the larger the family, the less frequently parents encouraged their children to continue beyond high school and the less effective any given level of parental encouragement was. Since the parents of a small family may devote more time and effort to each child, considerable attention may be paid to each child's progress. It may be that, because all their hopes are invested in fewer children, the parents of a small family may value and encourage achievement in each child, more so than the parents of a larger family. Further-

more, in the small family, parents may encourage competition and achievement in their children without putting as much stress on the equilibrium of the family unit as may occur in a larger family. Competition with standards of excellence and rivalry with peers and siblings have been recognized as characteristics of children from small families (Mead, 1954: 99-114).

Similarly, parental awareness of their children's schoolwork may mediate between family size and educational plans. Breton (1972:173) noted that students from large families are more likely to exhibit the disadvantages of

> '... a negative self-image, a low sense of control over events, a condition of dependence in decision-making, and a relatively high level of anxiety about the future.

In regard to this perspective, Hess and Shipman (1965) reported that there is a greater tendency for students from large families to accept events with resignation and to lower expectations in education accordingly. Assuming that most parents do not deliberately promote these characteristics in their children, it seems plausible to suggest that these characteristics may appear because the parents are unaware of what is happening to their children. There may be a greater likelihood of this happening when there are many children in the family than when there are a few children.

Elder and Bowerman (1963) reported that paternal involvement and external behavior control occur more often in large families than in small families. Thus, decision-

making probably lies with the father more often in a large family than in a small family. This may be because paternal control is more conducive to the maintenance of harmony in a large family; however, such paternal control may be detrimental to the development of higher educational goals by children. Children from a large family may become dependent upon the external imposition of decisions. On the other hand, children from smaller families, in which both parents and children may participate in decision-making because of the smaller, more manageable number of people, may be more able to cope with choosing among a number of alternatives in higher education. Furthermore, because of the smaller number of children, parents of a small family may keep abreast of their children's schoolwork and, if necessary, discipline them to ensure their meeting of achievement goals.

Intelligence Quotients

In many studies in which educational plans was the dependent variable, the child's intelligence quotient (IQ) has been viewed as an antecedent variable influencing the child's academic achievement and, in turn, his or her educational goals (see Kerchoff and Huff, 1974; Williams, 1972). Cohen (1965) provided empirical support that students with low IQs have less access to college, and Porter (1974) indicated that intelligence is a pervasive influence on the entire mobility process. It is recognized that a child's

IQ is not a family characteristic such as father's education or family size, but for the purposes of presenting this study it is most convenient to think of IQ in this manner. In any event, one should control for differences in IQ.

The child's IQ may influence the parents' behavior. A parent may take a greater interest in the schoolwork of an above-average IQ child than in that of an average or below-average child. In the case of the above-average child, the parents may derive personal satisfaction from being the parents of a bright child who is achieving well in school. The average child may spark less interest from his or her parents, and the below-average child may spark even less. Anchor and Anchor (1974) found that parents of children with low school success attended less scheduled Parent-Teacher conferences than parents of children with high success in school. Thus, parents whose child was doing poorly continued to know less about their child's schoolwork than parents of a child doing well in school. Furthermore, it may be both the average and above-average IQ children who are more likely to receive parental encouragement to aspire towards high educational goals, with the above-average probably receiving the most encouragement. Subsequently, it is more likely to be the average and above-average IQ children who actually do make higher educational plans. Unfortunately, there is a paucity of literature in this area and studies which directly support or refute these theoretical perspectives are unavailable. For example, a relatively

recently published psychology of education textbook (Rogers, 1972) contained an entire chapter on the nature of mental ability, but made no reference to how other people relate to children on the basis of the children's IQs.

The level of parental stimulation, in the form of parental awareness and encouragement of their children's schoolwork, may be affected by the children's IQs. When unstimulated, children may become satisfied with work which calls for little stress and strain and their ambitions may dull. Parents of average IQ children, and especially parents of above-average IQ children, may be more interested in their children's schoolwork and may be more inclined to read current literature in this area. They, consequently, may be more likely to provide adequate stimulation. Trowbridge (1974) found that among elementary school children the high IQ child seems to internalize high adult expectations and expects higher academic performance of himself. Studies such as this one by Trowbridge tend to lend support to the notion that, indeed, maybe the high IQ child receives such a high level of encouragement and expectations that he or she may internalize it. Gowan (1957) and Haggård (1957) concluded that the parents of high achieving students took a great deal of interest in the schoolwork of their children, attempted to motivate them, and generally pressured them to do well in school.

In a family, one of three conjugal decision-making patterns may exist. The father, or the mother, may make most

decisions, or most decisions may be made jointly by both parents. Porter (1974:304) suggested that "significant others, such as parents and peers, relate to a boy on the basis of their perception of his mental ability...". Parents of bright children may be less inclined to impose unilaterally arrived at decisions upon their children because of their children's insight into the pros and cons of the situation. Thus, parents of bright children may share decision-making more than the parents of less bright children. If a child observes joint give-and-take parental participation in decision-making, he or she may come to value advice and encouragement from others in deciding his or her educational goals.

In reviewing the statistics, Bird et al. (1970:167, 171) of the Royal Commission on the Status of Women in Canada, pointed out that more girls than boys stay at home until the higher grade levels, fewer girls than boys complete senior matriculation, and fewer girls than boys go on to university. Yet, the Commission's report stated that

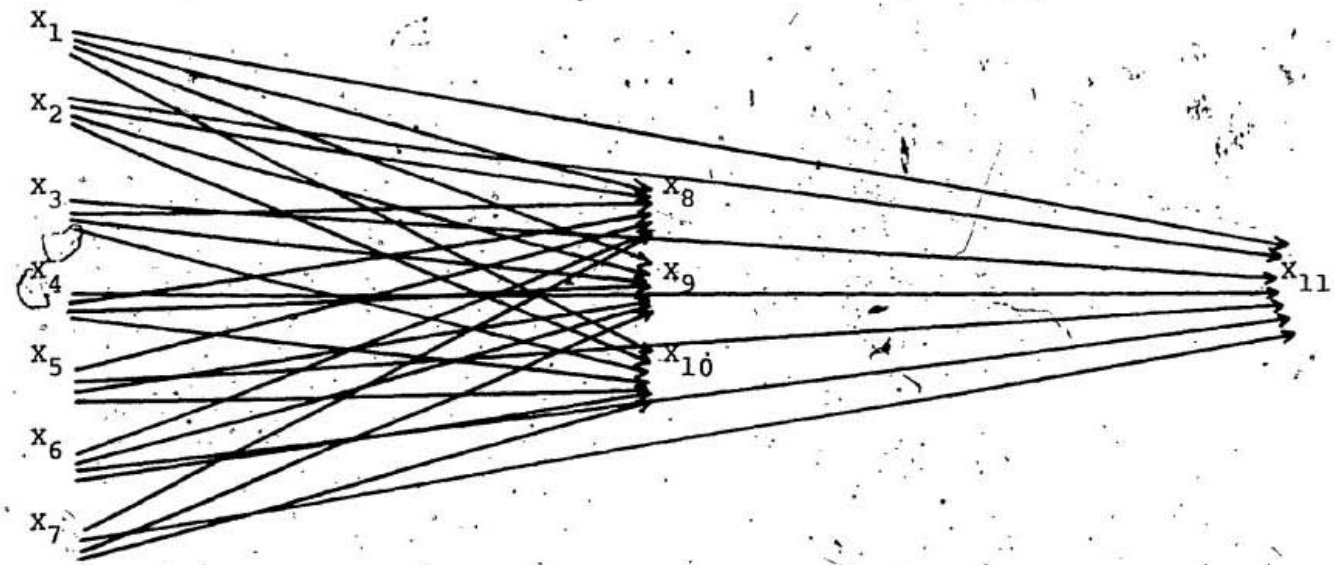
> ... the higher marks of girls at the secondary school level do not necessarily mean that girls are more intelligent than boys. Nor is the preponderance of boys in the senior matriculation year and at the university due to differences in capacity between the sexes (Bird et al., 1970:173).

Intelligence cannot be predicted on the basis of sex alone. Maccoby (1966), for instance, found that tests measuring aptitudes and abilities show some differences between sexes, but larger differences within sexes. However, males and

females continue to make different educational plans. This may be because of values transmitted to them by their parents. Maslow et al. (1960:208) found in their study that "the woman in order to be a good female may feel it necessary to give up her strength, intelligence or talent, fearing them as somehow masculine and dehumanizing". Although actually as intelligent as her male peer, a female student may assume an appearance of being less intelligent in order to fulfill a female role which she has been socialized into by her parents. The traditional sex dichotomy has been one of male superiority and female inferiority. Children reared in a home in which the parents treat their children on this basis, may come to internalize their parents' values and sex role expectations. As recently as 1976 Bogie found that high rates of discrepancy between aspirations and expectations are more characteristic of females than males. Bogie (1976: 254) noted that "the substantial reduction in girls' aspiration levels may largely reflect familial and communal expectations and differential expectations emerging from the socialization process".

THE THEORETICAL MODEL

Figure 1 presents the theoretical model of the study, which was derived from a review of the related literature. That is, this model provides a summary of the literature which has been reviewed, and it presents a picture of the relationships to be examined in the present research. In



Variable identifications are: X_1, Father's education; X_2, Mother's education; X_3, Father's occupation; X_4, Mother's occupational status; X_5, Parental presence; X_6, Family size; X_7, Child's IQ; X_8, Parental awareness; X_9, Parental encouragement; X_{10}, Parental decision-making; X_{11}, Educational plans.

FIGURE 1. The Theoretical Model

this model every variable to the right is affected by every variable to its left. As indicated, seven independent variables, father's education, mother's education, father's occupation, mother's occupational status, parental presence, family size, and the child's IQ, have both direct and indirect effects upon the dependent variable, educational plans. It is also noted that the indirect effects are mediated through parental awareness, parental encouragement, and parental decision-making. The review of the literature did not indicate the comparable size of each of these relationships, but it is hypothesized that some independent variables will influence educational plans more than others.

The literature has suggested that positive relationships will exist between father's education, mother's education, father's occupation, mother's occupational status, parental presence, the child's IQ, and educational plans. It is hypothesized that a negative relationship will exist between family size and educational plans.

This model will be considered separately for males and females. It is hypothesized that the effects upon educational plans of the selected family characteristics, father's education, mother's education, father's occupation, mother's occupational status, parental presence, family size, and the child's IQ, as mediated through parental awareness, parental encouragement, and parental decision-making, will differ for the two groups. Because of the economic role which males have traditionally filled, it may be that they

are not as affected by family characteristics as are females. That is, in families of all socioeconomic status levels, males have traditionally been prepared to enter the labor force. One important means of preparation has been through their formal education, and thus, males have traditionally received both societal and parental support to continue their educations. On the other hand, wide recognition of the female potential for a significant role in the labour force, and the female need for a good education, has occurred only in the last few decades. Females may not be as accustomed to societal acceptance and parental support of the setting of high educational goals. Thus, it may be that the selected family characteristics and value orientations considered in the present study may be important determining variables for females' educational plans, but of lesser importance for the educational plans of males.

CHAPTER 3

THE RESEARCH PROCEDURES

This chapter presents the research methodology used in the present investigation. The chapter contains three main sections. The first section describes the sample employed. The measurement of the variables is presented in the second section, and the type of analyses is described in the third section.

THE SAMPLE

In 1965 a Careers Decision Project was undertaken by Raymond Breton with the cooperation of the federal Department of Labour and the provincial Departments of Education. Included in the study were publicly operated secondary schools in each of the ten provinces. The schools represented a cross-section of those within each province. The Canadian Northwest Territories and Yukon were not included in the study.

The sample of schools was selected by a stratified probability technique. The basic criteria for stratification were: (1) province, (2) size of community, (3) type of school, and (4) size of school by enrollment. A publicly operated secondary school was defined as one in which at least one student was enrolled in a grade designated as being

at the secondary level. However, those schools offering instruction in only one secondary grade were eliminated, while "all-grade" schools were retained.

The four strata of community size were: (1) communities with populations of 100,000 and more, (2) those between 10,000 to 99,999, (3) those between 1,000 to 9,999, and (4) those with populations of less than 1,000. Schools were distributed according to their secondary school enrollment in intervals of 100. Breton set the permissible sample error at plus or minus 7.5 per cent, at a 95 per cent level of confidence.

Once the sample size for a given school type in a given province had been determined, both the size of the schools in each stratum and the size of their respective communities were taken into account in the selection. All secondary school students in the schools selected were considered part of the sample. This increased the reliability of the measures of school characteristics obtained from the aggregation of those responses.

The present study examined data collected from Newfoundland schools. A sample of 38 secondary schools, out of a total of 425 secondary schools in the province, were sampled. From these 38 schools, 6,815 secondary school students, out of a total secondary school enrollment in Newfoundland of 24,664, were selected (Breton, 1972:405). Of the 6,815 students, 3,315 students were female and 3,500 were male. Table 1 shows the number of males and females

TABLE 1

Number of Males and Females in Each Grade Level*

	Grade Level						
	9	10	11	12	Vocational	Totals	Per cent
Males	1,035	1,127	852	6	475	3,495	51.28%
Females	973	1,006	744	23	540	3,286	48.21%
Totals	2,008	2,133	1,596	29	1,015	6,781	
Per cent	29.46%	31.29%	23.41%	.42%	14.89%	99.47%	

*Missing values = 34.

at each grade level.

Here it can be seen that grades 9, 10, and 11 each form approximately one-third of the sample. Grade 9 students compose 29.46 per cent, grade 10 students compose 31.29 per cent, and grade 11 students compose 23.41 per cent of the sample. Grade 12 students make up only .42 per cent of the sample. This is because only one school in the province offers grade 12. Furthermore, 14.89 per cent of the sample are in provincial vocational schools, which means that they are not in a grade as such. Breton (1972:401) explains that Newfoundland vocational students were included in the sample to constitute a coverage of schools equivalent to other provinces.

The total sample is well divided between males and females with 48.21 per cent of the entire sample being composed of females and 51.28 per cent of the entire sample being composed of males. This fairly equitable split between males and females in the entire sample is also reflected within each grade. As can be seen in Table 1, the largest difference between the number of males and females is in grade 10, where 121 more females than males compose the sample. The mean difference between the number of males and females at any grade level is 74.6.

It must be noted that there is a discrepancy between the sample size of the present study and the Newfoundland sample size reported by Breton (1972:405). The sample size of the present study is 6,815 while Breton has reported that data were collected from 6,786 Newfoundland students. Thus,

there is a discrepancy of 29 students. These 29 students represent .42 per cent of the sample size of the present study. It may be that Breton has incorrectly reported the sample size, or it may be that extra cases were recorded on the tape sent by Breton to the Newfoundland provincial government and used in the present study. However, since the present study reports 29 students at the grade 12 level it is likely that Breton (1972) did not include the grade 12 Newfoundland students in his study.

A pilot study was carried out during the winter and spring of 1965 in 15 schools which did not compose the sample for the main study. The selection of schools followed the same procedure as that of the main study. The pilot study was done to test the research instruments, a questionnaire which was to be filled out by all students in the secondary schools in the sample, and the Otis-Lennon Mental Ability Test. Details of the research instruments are found in Breton (1972:409-440).

In the fall of 1965 the teachers in the schools in the sample administered a revised questionnaire and the mental ability test to their students. A second questionnaire was administered by the same teachers in the spring of 1966. The second questionnaire contained certain questions repeated from the first questionnaire and a number of additional questions.

MEASUREMENT OF THE VARIABLES

This section describes the measurement of the variables examined in the present study. Parental education, father's occupation, mother's occupational status, parental presence, family size, child's IQ, parental awareness, parental encouragement, parental decision-making, and educational plans were used in the present study. It should be noted here that, in measuring some of the variables, categories have been reordered and, in some cases, collapsed to encompass a number of categories in one. This was done to make the data more normally distributed because normally distributed data constitutes one of the assumptions for multiple regression (Blalock, 1972). By using normalized data, relationships between variables may more easily be discerned. Skewed data, on the other hand, may obscure relationships.

Parental Education

Father's education, (X_1), and mother's education, (X_2), were measured by responses to a question which asked, "How far did your father go in school?" and a question which asked, "How far did your mother go in school?" The responses to both questions were mostly the same: (1) none, (2) elementary school, (3) some high school, (4) finished high school, (5) college or university, (6) post-secondary technical school, such as institute of technology, (7) teacher's college or normal school, (9) business or commercial college, (10) other,

and (11) don't know. Only response number eight differed: for father's education the response was, (8) agriculture college or institute, and for mother's education the response was, (8) nursing school. For both items, these 11 categories were recoded into three levels of educational attainment: low (categories 1, 2, 11), medium (categories 3, 4), and high (categories 5, 6, 7, 8, 9). Sixteen per cent of the responses to the question about father's education were in category 11, and 13 per cent of the responses to the question about mother's education were in category 11. There were two options as to what to do with this data: it could have been recoded as missing data, or certain assumptions could be made, and the data recoded into another category. The latter option was chosen and category 11 was recoded as low because it was assumed that a child may not know how far his or her parent went in school if the parent's educational level was not discussed in the home. It was further assumed that a parent who has attained a low educational level would be less likely to discuss his or her education, than a parent who has attained a high educational level.

The descriptive statistics for father's education and mother's education are given in Table 2. For both variables the statistics are similar for males and females. The means are all close to 1.500, with standard deviations all close to 0.650. Father's education data are slightly more positively skewed and mother's education data has a slightly higher negative kurtosis. In both there

TABLE 2

Descriptive Statistics of Variables Used in the Present Study

Variable		$\bar{X}$	SD	Kurtosis	Skewness	Variance	SE	Missing Data	% Data Missing
Father's education	Males	1.479	0.638	-0.128	0.985	0.406	0.013	550	8.07%
	Females	1.500	0.660	-0.224	0.969	0.435	0.014	769	11.28%
Mother's education	Males	1.588	0.643	-0.593	0.635	0.413	0.013	547	8.03%
	Females	1.651	0.677	-0.753	0.559	0.459	0.014	766	11.24%
Father's occupation	Males	2.924	0.026	-1.274	.074	1.983	0.026	89	1.31%
	Females	2.777	0.026	-1.272	0.171	2.001	0.026	56	.82%
Mother's occupational status	Males	1.158	0.365	1.511	1.874	0.133	0.007	539	7.91%
	Females	1.170	0.376	1.088	1.757	0.141	0.008	731	10.73%
Parental presence	Males	1.900	0.300	5.086	-2.664	0.090	0.006	664	9.74%
	Females	1.901	0.298	5.256	-2.694	0.089	0.006	833	12.21%
Family size	Males	2.008	0.718	-1.062	-0.011	0.516	0.013	84	1.23%
	Females	2.003	0.712	-1.027	-0.047	0.507	0.013	77	1.13%
Child's IQ	Males	3.043	1.391	-1.251	-0.029	1.936	0.026	0	0%
	Females	2.941	1.344	-1.166	0.067	1.806	0.025	0	0%
Parental awareness	Males	3.968	1.171	-0.544	0.016	1.372	0.025	727	10.67%
	Females	3.681	1.118	-0.470	0.112	1.249	0.025	1005	14.75%

Table 2 (cont'd.)

Variable		$\bar{X}$	SD	Kurtosis	Skewness	Variance	SE	Missing Data	% Data Missing
Parental encouragement	Males	5.763	0.554	9.303	-2.780	0.307	0.012	979	14.37%
	Females	5.808	0.480	7.274	-2.656	0.230	0.011	996	14.61%
Parental decision-making	Males	2.443	0.855	-0.908	-0.984	0.731	0.018	610	8.95%
	Females	2.561	0.793	-0.043	-1.351	0.628	0.017	864	12.39%
Educational plans	Males	11.638	3.389	-0.398	-0.708	11.488	0.063	75	1.10%
	Females	11.914	3.206	-0.636	-0.612	10.279	0.059	60	.88%

are more missing data for females, and the mean parental education level is slightly higher for females.

Father's Occupation

Father's occupation, (X_3), was determined by a question which asked, "What is your father's occupation?" Students were directed to indicate as accurately as they could, using two words if possible. According to Breton (1972:445) the responses were coded into 96 categories using the Occupational Classification Manual (1961) of the Dominion Bureau of Statistics. For the present study, the 96 categories were further subdivided into five occupational groups: (1) categories 97 and 98; (2) categories 71 through 96; (3) categories 58 through 70; (4) categories 31 through 57; (5) categories 1 through 30. Because titles for Breton's 96 categories were unavailable, the five subdivisions, ranging from a low of (1) to a high of (5), were made on the basis of correlation with father's education. This correlation was 0.227. It compared favorably with correlations between father's education and father's occupation reported in the literature (see, for example, Bulcock, 1975).

Descriptive statistics for father's occupation for males and females are presented in Table 2. The data for the females are slightly more skewed than the data for males. Beyond this, the statistics are very similar for both groups. The means for both males and females are close to 2.800, and the standard deviations and standard errors are identical.

Mother's Occupational Status

Mother's occupational status, (X_4), was determined by responses to a question which asked, "Does your mother work outside the home?". The possible responses were, (1) yes and, (2) no. These two categories were reverse coded to (1) no and, (2) yes. This was done in an attempt to be consistent with other variables in this study which range from low to high. Mother's occupational status was entered in the analyses as a dummy variable in which "no" was coded as "1", and "yes" was coded as "2". This means that positive effects indicate that educational plans are higher when the mother works, and negative effects indicate that educational plans are higher when the mother does not work outside the home. Dummy variable analysis, in which a given category is assigned an arbitrary number while all other categories are assigned different arbitrary numbers, is a highly useful feature of multiple regression analysis. It is an important method of considering nominal variables in models of the present type (see, for instance, Kerlinger and Pedhazur, 1973; Miller and Erickson, 1974; and Suits, 1957).

Descriptive statistics for the mother's occupational status variable are presented in Table 2 for males and females. As shown, there were 539 missing observations for males and 731 missing observations for females. These relatively high numbers of missing data may be attributed to poor wording of the question. Some children who answered the questionnaire may have been confused as to whether part-time employment or

volunteer work qualified as "yes" or "no".

It is noteworthy that the measurement of the mother's occupational status variable may not have provided as much information as is possible to obtain. It may have been more useful to include questions regarding the type of work the mother is engaged in, how much time the mother spends working outside the home, how many years the mother has been working, and whether or not the mother is satisfied with her work. However, as pointed out previously, the present study is limited to data already collected.

In general, the descriptive statistics on this variable are similar for both males and females. The means of 1.158 for males and 1.170 for females, and their respective standard deviations of 0.365 and 0.376 are quite close. The data for the males are slightly more peaked with a kurtosis of 1.511, as compared with a kurtosis of 1.088 for the females. Data for both groups are positively skewed.

Parental Presence

Parental presence, (X_5), was measured by responses to the question, "Which of the following statements describes your family situation?". The possible responses were: (1) I live with both of my parents, (2) my father is dead and I life with my mother, (3) my mother is dead and I live with my father, (4) both my parents are dead, (5) both my parents are dead and I live with foster parents, (6) my parents are separated or divorced and I live with my mother, (7) my

parents are separated or divorced and I live with my father, (8) other. Categories 4, 5, and 8 were recoded as missing data because the present study is concerned only with whether one or two parents are present in the home. Categories 2, 3, 6, and 7 were recoded as category 1, and category 1 was recoded as category 2. Thus, for the present study the following categories were employed: (1) one parent present, and (2) two parents present. Since these are essentially nominal categories, a dummy variable was used. "One parent present" was coded as 1, and "two parents present" was coded as 2. This means that positive effects indicate that educational plans are higher when two parents are present, and negative effects indicate that educational plans are higher when only one parent is present.

The descriptive statistics in Table 2 indicate that the data is negatively skewed for males and females. This is because more children live with both parents than with either the mother or father alone. Similarly, the kurtosis is high for both males and females for the same reason.

Family Size

Family size, (X_6), was determined by responses to a question which asked, "How many brothers and sisters do you have?". There were nine possible responses, ranging from (1) none, to (9) eight or more. The data were recoded into three groups representing low family size (none, one, and

two), medium family size (three, four, five, and six), and high family size (seven, and eight or more).

Descriptive statistics for the family size variable for both males and females are presented in Table 2. As can be seen, the statistics are quite similar for the two groups. The standard errors are identical for both groups, and the standard deviations are quite close with 0.718 for males and 0.712 for females. Likewise, the means are extremely close with 2.008 for the males and 2.003 for the females. The data for both groups are negatively skewed and both have a negative kurtosis.

Child's IQ

In order to measure child's IQ, (X_7), the Otis-Lennon Mental Ability Test Advanced Form Ac (Harcourt, Brace and World, 1965) was administered. The derived scores for the Otis-Lennon MAT were based on grade group because calculation of derived scores by age group requires administering the test to all grades in which children of a given age are likely to be found, and in actual practice, a high correlation typically exists between rank in a chronological age group and rank in a grade group. From the derived scores obtained, percentile ranks were derived and reported.

For the present study the 99 percentile ranks were reordered into five categories ranging from low to high: (1) percentiles 1 through 9; (2) percentiles 10 through 21;

(3) percentiles 22 through 41; (4) percentiles 42 through 99. By dividing the percentile ranks in this way it was possible to work with data which more closely approximated normality.

As Table 2 shows, the data for males are only slightly negatively skewed (-0.029) and the data for females are only slightly positively skewed (0.067). Means for both groups are close to 3.

Parental Awareness

A composite of the questions, "How much would you say your father knows about your work in school?", and "How much would you say your mother knows about your work in school?", was used to measure parental awareness, (X_8). The possible responses to both questions were: (1) a great deal, (2) a fair amount, and (3) very little. For both questions the responses were reverse-coded to range from low to high. The correlation between the items, with 4,866 valid observations, was 0.526 which is significant at the 0.001 level.

Descriptive statistics for the parental awareness variable are presented in Table 2. There are considerably more missing data for females than for males. The statistics for both males and females approach normality with very little skewness, 0.016 for the males and 0.112 for the females, and with a slightly flattened curve, with a kurtosis of -0.544 for the males and -0.470 for the females. The means and standard deviations are quite close, and the standard errors are identical.

Parental Encouragement

Parental encouragement, (X_9), of the development of educational goals was measured by a composite of the following two questions: "How far do your parents want you to go in school?" and "Do your parents want you to continue your education after high school?". The use of these questions defined parental encouragement as dependent upon the child's recognition and acknowledgement of such encouragement. In the present study, the extent to which a child perceives his or her parents as being encouraging was more important than the actual amount of encouragement provided; it was maintained that it is the child's perception of parental encouragement which will influence educational plans.

Furthermore, the use of these two questions may not have provided as precise a measure of parental encouragement as may be required. These questions may have been more appropriate indicators of parental aspirations for their children. However, since Breton (1972:183, 184) does use the terms "aspirations" and "encouragement" interchangeably it was assumed that these questions adequately measured the variable, parental encouragement.

Responses to the question, "How far do your parents want you to go in school?" ranged from a low of (1) leave soon, to (2) leave later, but before finishing, to (3) stay until finishing. The responses to the question, "Do your parents want you to continue your education after high school?"

were: (1) on a full-time basis, (2) on a part-time basis, and (3) not at all, and were reverse coded to range from low to high. In both questions a fourth category, (4) don't know my parents' wishes, was coded as missing data. The correlation between the items, with 4,527 valid observations, was 0.182, which is significant at the 0.001 level.

Descriptive statistics for the parental encouragement variable are presented in Table 2 for males and females. The kurtosis is high for both groups indicating that, for both males and females, parental encouragement often falls at a mean level. Also, there are a large number of missing data, 979 for males and 996 for females, perhaps indicating that many students have not considered parental encouragement and are unsure of its level. The data is negatively skewed for both males and females.

Parental Decision-Making Pattern

Parental decision-making pattern, (X_{10}), was determined by responses to the question, "In general, how are decisions made in your family?". The possible responses were: (1) in general, father makes the decisions, (2) in general, mother makes the decisions, (3) both parents make the decisions, and (4) each parent acts individually. Categories 1 and 2 were recoded as category 1, and category 4 was recoded as category 2. The recoding of categories resulted in three categories: (1) one parent makes the decisions, (2) each parent acts individually, and (3) both

parents make the decisions.

The descriptive statistics of parental decision-making pattern are presented in Table 2. The kurtosis is higher for males than for females, indicating that the decision-making patterns of the parents of males tend to fall more at the mean level than do those of the parents of females. In addition, the data for the females are more negatively skewed, suggesting a greater tendency for a one-parent decision-making pattern among the parents of females than among the parents of males. The means for both groups are very similar and the standard deviations and standard errors are also quite close.

Educational Plans

Educational plans, (X_{11}), was measured by a composite of the following two questions: "Do you think that you will leave school soon, leave later, or stay until finishing?" and "Do you think you will continue your education after high school on a full-time basis, on a part-time basis, or not at all?". The responses to the first question were reordered to range from low to high: (1) don't know, (2) definitely leave soon, (3) probably leave soon, (4) definitely leave later but before finishing, (5) probably leave later but before finishing, (6) probably finish high school, (7) definitely finish high school. The responses to the second question were reverse-ordered to also range from low to high: (1) have not yet thought about it, (2) undecided,

(3) definitely not at all, (4) probably not at all, (5) probably part-time, (6) definitely part-time, (7) probably full-time, (8) definitely full-time. The correlation between these items for 6,618 valid observations was 0.205, which was significant at the 0.001 level.

Descriptive statistics for this variable are presented in Table 2 for males and females. The statistics are similar for both groups.

TYPE OF ANALYSIS

The data was analyzed by the method of multiple regression. This method not only specifies relationships, but more importantly, reports on the size of the relationships. Using the principles of correlation and regression, it enables the researcher to discover how much change in the dependent variable will result from one standard deviation change in the independent variable, when other independent variables are held constant (Blalock, 1972). The basic equation of simple linear regression is $y = a + bx$, where "x" are the scores of the independent variable, and "y", the predicted scores of the dependent variable. The "a" represents the intercept constant, and "b" the regression coefficient. The method of multiple linear regression extends this basic equation to include more independent variables. The results of the calculation of this equation tell how "good" the prediction is, and approximately how much of the variance of y is accounted for by the "best"

linear combination of the independent variables.

Path analysis, a variation of multiple regression, was also employed. Path analysis does not prove causality, but is useful in that it demands a specification in the theoretical model of the order of causality. For a more detailed description of path analysis see Duncan (1966).

This chapter has described the sample, the measurement of the variables, and the type of analysis of the present study. Data were collected from 6,815 Newfoundland secondary school students, and the following independent variables were analyzed by the method of multiple regression and path analysis for their effects on educational plans: father's education, mother's education, father's occupation, mother's occupational status, parental presence, family size, and the child's IQ. Furthermore, the following variables were examined for possible mediating effects: parental awareness, parental encouragement, and parental decision-making. The findings of the multiple regression and path analyses are presented in the next chapter, Chapter 4.

CHAPTER 4

THE FINDINGS

In this chapter the effects of selected family characteristics upon family value orientations and children's educational plans, are estimated. Furthermore, the results for males are compared with those for females.

The chapter begins with a presentation of the intercorrelations among the variables. It continues with an examination of the parameters of a basic model and then progresses by including more variables and rearranging the order of the variables to obtain more and more complex models. As the models become more complex, and thus more congruent with the theoretical perspectives advanced in Chapter 2, they may provide a better understanding of the way things work in the real world. This strategy for developing and evaluating various models is commonly known as the incremental process of model building.

THE PEARSON CORRELATION COEFFICIENTS

First, in order to estimate the parameters of the models, Pearson correlation coefficients among all variables presently being studies, were determined. The intercorrelations for both males and females are presented in Table 3. The upper matrix contains the correlations and the lower

TABLE 3

Intercorrelations Between the Variables[1]

A: Males

	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}
X_1		.375	.234	.013	.072	-.148	.193	.148	.132	.046	.198
X_2	2377		.151	.113	.038	-.113	.180	.172	.108	.049	.193
X_3	2321	2323		.036	.107	-.076	.200	.077	.078	.095	.146
X_4	2370	2373	2331		-.064	-.127	.036	-.021	.028	-.035	.035
X_5	2254	2263	2213	2265		.020	.061	.093	.030	.391	.066
X_6	2340	2344	2781	2350	2230		-.068	-.048	-.080	-.035	-.140
X_7	2399	2402	2860	2410	2285	2865		.062	.150	.045	.262
X_8	2195	2198	2149	2214	2112	2166	2222		.094	.110	.142
X_9	1648	1640	1907	1643	1566	1924	1970	1524		.020	.332
X_{10}	2305	2312	2265	2314	2216	2281	2339	2207	1605		.026
X_{11}	2349	2348	2793	2355	2235	2801	2874	2176	1941	2286	

Variable identifications are: X_1, Father's education; X_2, Mother's education; X_3, Father's occupation; X_4, Mother's occupational status; X_5, Parental presence, X_6, Family size; X_7, Child's IQ; X_8, Parental awareness; X_9, Parental encouragement; X_{10}, Parental decision-making; X_{11}, Educational plans.

[1] The correlation matrix is above the diagonal and the number of cases upon which the correlations are computed are below the diagonal.

Table 3 (cont'd.)

B: Females

	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}
X_1		.382	.237	.029	.041	.157	.278	.200	.094	.031	.211
X_2	2183		.115	.135	.032	-.147	.237	.177	.116	.025	.237
X_3	2166	2168		-.004	.111	-.106	.218	.103	.064	.049	.171
X_4	2193	2196	2204		-.079	-.128	.046	-.007	.007	-.081	.017
X_5	2103	2123	2101	2130		-.028	.007	.095	.027	.528	.027
X_6	2161	2164	2854	2199	2098		-.139	-.055	-.107	-.037	-.146
X_7	2216	2219	2929	2254	2152	2908		.108	.100	.025	.298
X_8	1941	1956	1935	1966	1911	1929	1980		.101	.165	.197
X_9	1546	1555	1945	1578	1519	1944	1989	1409		.060	.283
X_{10}	2076	2090	2071	2096	2036	2067	2121	1967	1508		.063
X_{11}	2170	2173	2870	2206	2107	2851	2925	1940	1962	2076	

Variable identifications are: X_1, Father's education; X_2, Mother's education; X_3, Father's occupation; X_4, Mother's occupational status; X_5, Parental presence; X_6, Family size; X_7, Child's IQ; X_8, Parental awareness; X_9, Parental encouragement; X_{10}, Parental decision-making; X_{11}, Educational plans.

[1]The correlation matrix is above the diagonal and the number of cases upon which the correlations are computed are below the diagonal.

matrix contains the number of cases upon which the correlations were computed. In general, none of the independent variables are highly intercorrelated, thus eliminating multicollinearity as a problem in the present study. Multicollinearity refers to the situation in which some of all of the independent variables are very highly intercorrelated, preventing the multiple regression procedure from accurately evaluating the relative importance of the independent variables (Nie et al., 1975:340).

A brief examination of these coefficients for males indicates that the highest correlation is between father's education and mother's education, .375, and the lowest correlation is between father's education and mother's occupational status, .013. This may indicate that adults tend to marry others of similar educational backgrounds and that, once married, there is little predictability on the basis of father's education whether the mother chooses to work or not. Family size is negatively correlated with all variables except parental presence. The negative correlations between family size and such variables as parental awareness and parental encouragement are not surprising considering the limitations placed on the length of time which may be spent with each child in a large family. Negative correlations are also found between mother's occupational status and parental presence, parental awareness, and parental decision-making. That is, when the mother works outside the home it is more likely that she is the only parent in the home and

that she makes most decisions. The negative correlation between mother's occupational status and parental awareness, however, contradicts the theoretical perspective proposed in Chapter 2. It was suggested that working mothers may strongly value routinized behavior and, subsequently, may routinely help their children with schoolwork. The negative correlation, on the other hand, indicates that working mothers are less aware of their children's schoolwork.

The amount of missing data varies for each variable. It can be seen that the number of cases on which each correlation is computed, is dependent upon the number of cases available for each of the two variables being correlated. For example, the correlations between parental encouragement and every other variable are computed on less than 2,000 cases in each instance. On the other hand, the correlation between child's IQ and every other variable are computed on over 2,200 cases in each instance. This is to be expected because every child who participated in the study wrote a mental ability test, thus providing an IQ score for each child. However, the lower number of cases for parental encouragement may indicate that children do not generally consider, or know, the level of parental encouragement which they are subjected to.

The correlation coefficients for females show some interesting similarities to those for males. Again the highest correlation is between father's education and mother's education, .528, but the lowest correlation is between father's

occupation and mother's occupational status, -.004. Even though this correlation is extremely small, it is interesting to find a negative correlation between father's occupation and mother's occupational status. It may be that, as fathers attain positions higher on a socioeconomic scale and the economic necessity of working is removed, wives may choose to stay at home or are encouraged by society to stay out of the labour force. However, the correlation is really too small to permit much speculation. Again, negative correlations are consistently found between family size and the other variables. A negative correlation is also found between parental presence and mother's occupational status. This may indicate that a mother is more likely to work outside the home when she is the only parent residing in the home.

In considering the number of cases upon which the correlation coefficients between variables are calculated for females, it can be seen in Table 3 that the correlations of parental awareness and parental encouragement with all other variables are based on the least number of cases, while the correlations between child's IQ and all other variables are generally based on the greatest number of cases. This is consistent with the data available for males.

Although the intercorrelations presented above are useful in providing some perspective on the relationships among variables, it is important to point out that these intercorrelations do not indicate the magnitude of the causal relationships between the variables. Part of each

correlation coefficient is composed of indirect, joint, and spurious effects (Kerlinger and Pedhazer, 1973). In estimating the magnitude of the causal effects, standardized effect parameters are necessary, and in estimating the similarities and differences between males and females, unstandardized effect parameters are necessary (Kim and Mueller, 1976). However, the estimated effect parameters have meaning only insofar as the analyses are directed by the theoretical considerations previously discussed. As pointed out in Chapter 3, path analysis does not prove causality, but does demand a specification, in the theoretical model, of the order of causality. Therefore, each model to be presented in this chapter will be linked with the appropriate theoretical perspective.

THE BASIC MODEL

The analyses begin with an initial model which relates father's education, mother's education, father's occupation, mother's occupational status, family size, and child's IQ, to the child's educational plans. Four of these independent variables, father's education, mother's education, father's occupation, and family size have been shown, in numerous studies, to be significantly related to children's school achievement and aspirations (Bennett and Gist, 1964; Hutner, 1972; Pavalko and Bishop, 1966; Sewell et al., 1957). By relating these four variables to educational plans, rather than relating one variable or some combination of variables grouped together, it is possible

to obtain a better understanding of how the important components of family characteristics individually affect educational plans.

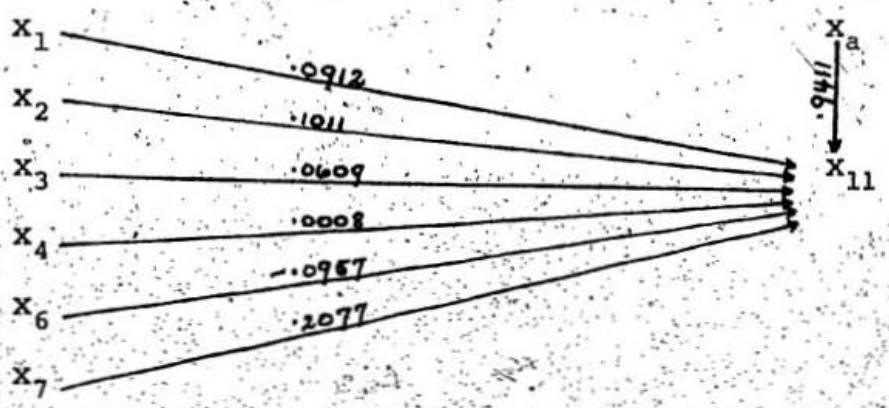
In addition to these four commonly examined family characteristics, mother's occupational status is included in this basic model because studies have found maternal employment to be an important background variable for females in their desires and plans for attending college, and in their ambitions for attaining high career goals (Almquist and Angrist, 1971; Banducci, 1967; Ginzberg, 1971), and also because the relationship between mother's occupational status and educational plans has not been well examined for males. Similarly, child's IQ is included in this basic model because it too has frequently been found to be an important variable influencing academic achievement and educational goals (Kerchoff and Huff, 1974; Williams, 1972).

The results for this analysis are presented in Figure 2. However, before proceeding it may be useful to review how the coefficients in this figure were computed, and how they must be interpreted.

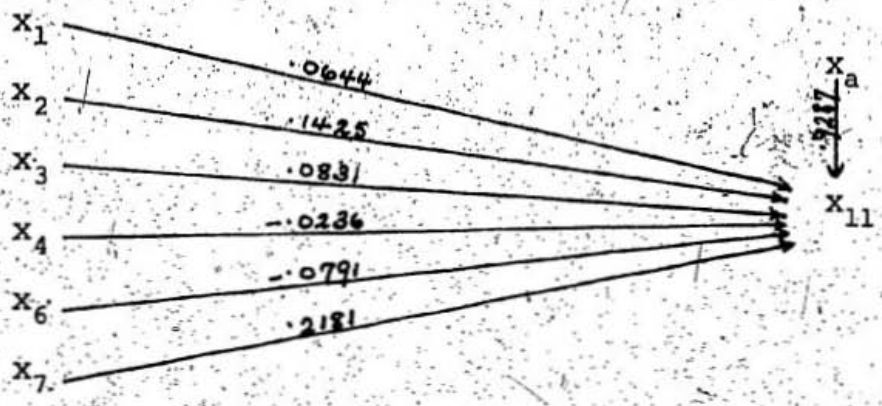
In order to obtain the results presented in Figure 2, X_{11} has been regressed upon X_1, X_2, X_3, X_4, X_6, and X_7. The six linear equations used as a basis for calculating the standardized effect parameters for this model are:

$$r_{1,11} = P_{11,1}r_{11} + P_{11,2}r_{12} + P_{11,3}r_{13} + P_{11,4}r_{14} + P_{11,6}r_{16} + P_{11,7}r_{17} \quad (1)$$

A: Males



B: Females



Variable identifications are: X_1, Father's education; X_2, Mother's education; X_3, Father's occupation; X_4, Mother's occupational status; X_6, Family size; X_7, Child's IQ; X_{11}, Educational plans; X_a, Residual effects on educational plans.

FIGURE 2. Path Coefficients for a Basic Model of the Effects of Selected Family Characteristics on Educational Plans

$$r_{2,11} = p_{11,1}r_{21} + p_{11,2}r_{22} + p_{11,3}r_{23} + p_{11,4}r_{24} + p_{11,6}r_{26} + p_{11,7}r_{27} \quad (2)$$

$$r_{3,11} = p_{11,1}r_{31} + p_{11,2}r_{32} + p_{11,3}r_{33} + p_{11,4}r_{34} + p_{11,6}r_{36} + p_{11,7}r_{37} \quad (3)$$

$$r_{4,11} = p_{11,1}r_{41} + p_{11,2}r_{42} + p_{11,3}r_{43} + p_{11,4}r_{44} + p_{11,6}r_{46} + p_{11,7}r_{47} \quad (4)$$

$$r_{6,11} = p_{11,1}r_{61} + p_{11,2}r_{62} + p_{11,3}r_{63} + p_{11,4}r_{64} + p_{11,6}r_{66} + p_{11,7}r_{67} \quad (5)$$

$$r_{7,11} = p_{11,1}r_{71} + p_{11,2}r_{72} + p_{11,3}r_{73} + p_{11,4}r_{74} + p_{11,6}r_{76} + p_{11,7}r_{77} \quad (6)$$

In essence, these equations are the algebraic equivalents of the path model presented in Figure 2.

In order to interpret a path model, straight one-headed arrows connect a cause with an effect. The residuals, unmeasured determinants of a dependent variable, are represented by arrows originating at Xs with letter subscripts. The strength of the effect of an independent variable or a residual on a dependent variable (the standardized effect parameter) is noted on the arrow. This coefficient indicates the amount of increase in a dependent variable when the independent or residual variable is increased one standard deviation. A standardized effect parameter has a mean of zero and a standard deviation of one. As a rule of thumb, coefficients of .250 or greater are generally considered to represent strong effects, coefficients of between .250 and

.100 moderate effects, and coefficients of less than .100 weak effects.

It may be noted that the correlation coefficients between independent variables are not reported in Figure 2. This is because the correlations between all variables were reported in Table 3, and further reference may be made to that table. A lack of adequate space prevents their inclusion in Figure 2 and other figures presented in this chapter.

Figure 2 may be examined to see how good an explanation the basic model provides of both males' and females' educational plans. It can be seen that, for both males and females, the residual effects are strong, while the coefficients for the independent variables are generally weak. Nevertheless, it is instructive to examine the effect parameters in slightly greater detail.

For males, the influence of child's IQ (.2077) is more than double the influence exerted by any of the other independent variables in the model. This may imply that if one has only a measure of a child's IQ, one might be able to make a relatively good prediction of educational plans on that basis. Mother's education has the next strongest influence (.1011), followed closely by father's education (.0912) and family size (-.0957). All three variables, however, have relatively weak effects. It is interesting that mother's education (.1011) has a slightly greater influence than father's education (.0912) on the educational plans of males.

Also for males, father's occupation exerts a very small influence (.0609) and mother's occupational status exerts the least effect of all (.0008). At this point it should be reiterated that mother's occupational status was coded as a dummy variable; positive effects indicate that educational plans are higher when the mother works, and negative effects indicate that educational plans are higher when the mother does not work outside the home. All variables, except family size, have positive effects on the educational plans of males. As argued previously, as family size increases, and thus money, time, and energy resources tend to decrease, educational plans are lowered.

For females, child's IQ (.2181) has the largest effect upon educational plans of any of the independent variables. Thus, knowing the IQ of a female student may provide a better indication of the child's educational plans than knowing a number of other family characteristics. Mother's education (.1425) shows the next strongest influence, being moderately strong in comparison to the influence of father's education (.0644). Here, there seems to be some support for Treiman and Terrell's (1975) suggestion that like-sex modeling may operate to affect educational plans. Furthermore, it may be that like-sex modeling is more important for females than for males.

For females, father's occupation (.0831), family size (-.0791), and father's education (.0644), respectively, all show similar but weak effects upon educational plans,

with family size acting in the expected negative direction. Mother's occupational status (-.0236) shows the weakest effect on educational plans of females. However, even though mother's occupational status does have such a weak effect, it is noteworthy that the effect is in a negative direction, indicating that educational plans are higher when the mother works at home. This finding does not concur with those of other researchers who found maternal employment to have important positive effects on the educational plans of females (see, for instance, Almquist and Angrist, 1971; Banducci, 1967). However, it has been traditional in Newfoundland for mothers to work in the home, and for fathers to work outside the home. It may be that, at the time this data was collected, working mothers were disillusioned with female employment in a male dominated labour force, while homemakers still valued education as a desirable goal for their daughters irregardless of their daughters' plans for working.

Calculations based upon this model indicate that only 11 per cent of the variance in educational plans is explained by the independent variables for males, and only 14 per cent for females. A more elaborate model may explain a greater amount of variance.

Nevertheless, before examining a more elaborate model it is interesting to examine similarities and differences between the males and females. Unstandardized effect parameters are used to compare two groups. Unlike standardized effect parameters, unstandardized effect parameters have

means and standard deviations which depend upon the metric properties of the variables. Comparisons across populations may be made with unstandardized effect parameters because they are not affected by differences in variances, whereas the standardized coefficients are. When comparing models across populations it is important to take into account the differences in variances of variables. Of course, the basic relationship between variables remains unchanged whether standardized or unstandardized effect parameters are employed.

In Table 4 it can be seen that, while the effect of mother's occupational status is exceedingly small and positive for males, it is slightly stronger and negative for females. Father's education, mother's education, father's occupation, family size, and child's IQ, respectively, exert similar effects on both groups.

Rather than discuss in detail all the similarities and differences between the two groups for this basic model, another model which attempts to more closely approximate the theory that is directing this research, will be presented. At this point the argument is advanced by inclusion of parental awareness as an intervening variable.

PARENTAL AWARENESS AS AN INTERVENING VARIABLE

Children are the products of families, not only in the sense of being born into families with certain demographic characteristics such as the occupational level of their parents and the size of their families, but also, they are

TABLE 4

Unstandardized Regression Coefficients for the Effects of Selected Family Characteristics on Educational Plans

	Father's Education	Mother's Education	Father's Occupation	Mother's Occ. Status	Family Size	Child's IQ
Males	.4829	.5309	.1459	.0078	-.4498	.5039
Females	.3122	.6728	.1880	-.2005	-.3554	.5191

the products of families which maintain certain inter-personal relationships. These inter-personal relationships affect children's behaviors. By including parental awareness as an intervening variable in this model, an attempt is made to discover one possible inter-personal relationship which may mediate between certain family characteristics and children's educational plans.

Parental awareness is added to the basic model as an intervening variable in an attempt to understand the experience of a child, raised within a family which has certain characteristics. As noted in Chapter 2, a number of investigators have remarked upon the differences in parent-child relationships associated with certain demographic characteristics of the family (Finlayson, 1971; Rosen, 1961). In this model, then, the effects of certain family characteristics on educational plans are examined as their effects intervene through parental awareness of their children's schoolwork. This provides more information than the first model which gave no indication of how a child from a particular family background comes to develop his or her educational plans. In the present model parental awareness is presented as one possible means through which it occurs.

The research of Luszki and Schmuk (1963) suggested that the child's perception of parental awareness of his or her schoolwork is related to social status and correlates significantly with the child's own attitudes toward school

and actual performance in school. That is, high socio-economic status parents are probably more aware of their children's schoolwork; and, children who have parents who are more aware of their schoolwork, usually develop more positive attitudes towards school and are probably more likely to set higher educational goals. In fact, this perspective is plausible in that such parents, being better educated, are generally more aware of educational matters and may have jobs permitting them to spend more time on their children's affairs than could lower class parents.

Before proceeding with a discussion of this analysis, it is important to note that the parental awareness measure is derived from questions which were asked of the children, and not from questions which were asked of the parents. Therefore, the measure may be biased to the extent that the children are mistaken about how aware their parents actually are. However, it is not so much how aware of their children's school work that parents actually are that is of interest, but how aware their children perceive them to be. People act in situations according to how they perceive the situation. As W.I. Thomas (1928:527) has expressed it, "If men define situations as real, they are real in their consequences." Thus, children are affected not by the actual level of parental awareness, but by what they themselves perceive that level to be.

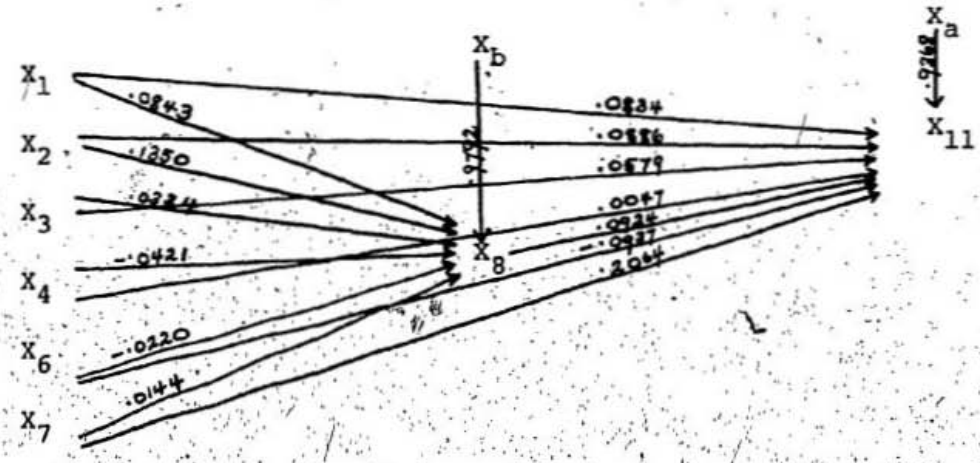
The results for the analysis in which parental awareness is included as an intervening variable are presented in

Figure 3. In order to calculate the effect parameters which are reported on the paths, X_8 has been regressed on X_1, X_2, X_3, X_4, X_6, and X_7, and X_{11} has been regressed on all of these variables. Thus, the independent variables are allowed to have both direct and indirect effects upon educational plans. This means that parental awareness may mediate some effects, while other effects may be direct.

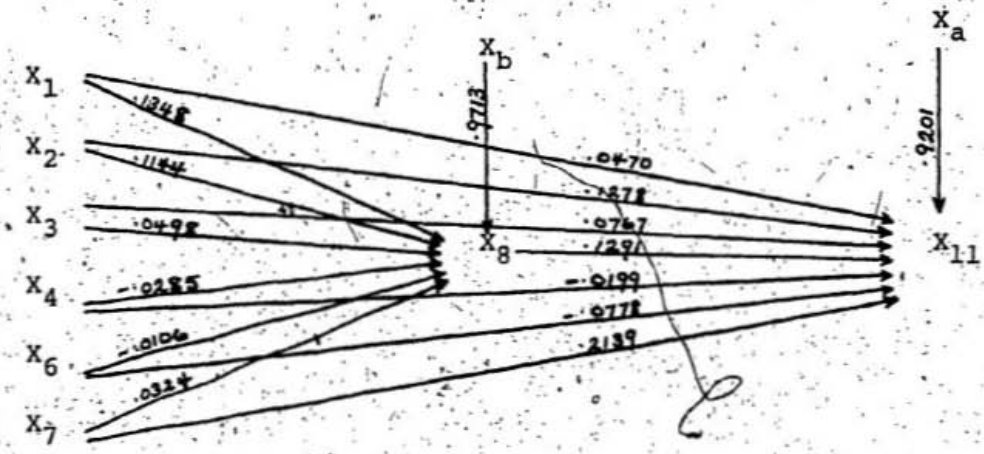
First, the additional parameter only increased the explained variance in educational plans by one per cent for both males and females. Thus, while the model fits the data slightly better than the model presented in Figure 2, the additional effect parameter has not resulted in any dramatic increases in the explained variance.

Of all the independent variables, males' IQs (.2064) continue to have the largest direct effect on their educational plans. The remaining variables exert weak effects, with all, except mother's occupational status, slightly decreased in magnitude of effect from those of the previous model. Family size (-.0937) is the only negative relationship and it exerts the second-largest direct effect on educational plans in this model. Parental awareness (.0924) exerts the third largest direct effect on educational plans. One interesting relationship that does not change in this model is the relative effects of parental education on educational plans. In the basic model, mother's education had a slightly larger positive influence on males' educational plans than did fathers' education, and it continues to do so in the

A: Males



B: Females



Variable identifications are: X_1, Father's education; X_2, Mother's education; X_3, Father's occupation; X_4, Mother's occupational status; X_6, Family size; X_7, Child's IQ; X_8, Parental awareness; X_{11}, Educational plans; X_a, Residual effects on educational plans; X_b, Residual effects on parental awareness.

FIGURE 3. Path Coefficients for the Effects of Selected Family Characteristics on Educational Plans, Intervening Through Parental Awareness

present model.

It appears that parental awareness, when added to the model as an intervening variable, acts as a mediating effect for most independent variables. The mother's education parameter is decreased 12.4 per cent; the father's education parameter is decreased 8.5 per cent; the father's occupation parameter is decreased 4.9 per cent; the family size parameter is decreased 3.1 per cent; and, the child's IQ parameter is decreased .8 per cent. Only the mother's occupational parameter has increased in this model. It has increased 82.0 per cent over that of the previous model, although still indicating a weak effect (.0047). This increase in the direct effects of mother's occupational status on males' educational plans suggests that for mother's occupational status, parental awareness may act as a suppressor variable (Rosenberg, 1968). That is, when parental awareness is not included in the model, the real effect of mother's occupational status on males' educational plans are not shown, they are, in fact, suppressed.

For males, mother's education (.1350) has the largest effect on parental awareness. The remaining variables have only weak effects on parental awareness, with mother's occupational status (-.0421) and family size (-.0220) operating in a negative direction. It may be that mother's education has a relatively larger effect on how aware she is of her son's schoolwork because, how educated she is, may affect how aware she can become. On the other hand, the negative

effect of mother's occupational status may indicate that, if the mother works outside the home, she may not have the time or interest to become very aware of her son's schoolwork.

For females, as for males, child's IQ (.2139) continues to have the largest direct effect on educational plans, parental awareness (.1291) exerts the second largest effect, and mother's education (.1278) the third largest effect. Mother's education (.1278) continues to have a larger direct influence upon females' educational plans than does father's education (.0470). Family size and mother's occupational status both show a negative effect on educational plans. While family size has consistently shown a negative effect on the educational plans of both males and females, it is noteworthy that mother's occupational status has shown a negative effect only for females. This means that, for males, educational plans are higher when the mother works outside the home but, for females, educational plans are higher when the mother works in the home. As previously proposed, it may be that Newfoundland mothers, who have traditionally stayed at home, still valued education for its own intrinsic value, and influenced their daughters to pursue higher education. Males, on the other hand, have traditionally been expected to pursue education and when their mothers work outside the home, they are made even more aware of the importance of education.

In this model, the direct effects of the independent variables on females' educational plans are all reduced in

size from those of the previous model. The father's education parameter is decreased by 28.6 per cent; the mother's occupational status parameter is decreased by 15.7 per cent; the mother's education parameter is decreased by 10.4 per cent; the father's occupation parameter is decreased by 8.9 per cent; the child's IQ parameter is decreased by 1.9 per cent; and the family size parameter is decreased by 1.6 per cent. While the direct effects of these independent variables were generally weak in the previous model, it appears that the inclusion of parental awareness as an intervening variable acts to mediate their direct effects.

Father's education (.1348) has the largest effect on parental awareness of females' schoolwork. Except for mother's education (.1144), the remaining variables exert generally weak effects upon parental awareness, with mother's occupational status (-.0285) and family size (-.0106) acting in a negative direction.

Table 5 presents the indirect effects of selected family characteristics on educational plans as they intervene through parental awareness. Using the rule of thumb discussed earlier, all indirect effects appear to be weak. For males, the largest indirect effect on educational plans is mother's education intervening through parental awareness (.0125). For females, the largest indirect effect on educational plans is father's education intervening through parental awareness (.0174). This means that, as father's education increases and his value of education probably

TABLE 5

Indirect Effects of Selected Family Characteristics on Educational Plans, Intervening Through Parental Awareness

	Father's Education	Mother's Education	Father's Occupation	Mother's Occ. Status	Family Size	Child's IQ
Males	.0078	.0125	.0031	-.0039	-.0020	.0013
Females	.0174	.0148	.0064	-.0037	-.0014	.0042

increases, he may want to become more aware of his daughter's schoolwork and her educational plans may be positively affected as a result. However, this does not appear to be as important for males, whose fathers may be interested in their sons' schoolwork regardless of their own educational level, but for whom the mother's educational level may be significant in making her aware of her son's schoolwork, and helping her son set high educational goals.

In Table 6 the unstandardized effect parameters are presented to provide a basis on which to compare the males and females. As would be expected if like-sex modeling were occurring, father's education is more important for males (.4417) than for females (.2279), and mother's education is more important for females (.6031) than for males (.4654). Also, father's occupation is more effective in promoting high educational plans for females (.1735) than for males (.1385). As discussed previously, father's occupation could be a significant influence upon females' educational plans because fathers in higher status positions may be more exposed to the idea of educational equality than may be fathers in lower status work positions.

It is interesting that mother's occupational status has a very slight positive effect on males' educational plans (.0044), but a stronger and negative effect on females' educational plans (-.1692). If mothers work outside the home, their daughters' educational plans may become lower as the daughters come to appreciate the struggle which their

TABLE 6

Unstandardized Regression Coefficients for the Effects of Selected Family Characteristics and Parental Awareness on Educational Plans

	Father's Education	Mother's Education	Father's Occupation	Mother's Occ. Status	Family Size	Parental Awareness	Child's IQ
Males	.4417	.4654	.1385	.0044	-.4402	.2663	.5007
Females	.2279	.6031	.1735	-.1692	-.3493	.3695	.5092

mothers may have in a male-dominated labour force which still does not wholeheartedly endorse working mothers. This finding is in contradiction to Chapter 2, where it was suggested that working mothers might promote the value of education and work for their daughters.

Family size is slightly more important for males (-.4402) than for females (-.3493). It may be that, if present-day parents are going to support their daughter's educational plans, they will do so regardless of family size, whereas in a traditionally-oriented family, only the sons may be supported if time and money resources permit it.

Child's IQ has about the same effect upon educational plans for both males (.5007) and females (.5092).

Parental awareness is more important for females (.3695) than it is for males (.2663). This may be explained in terms of a society which has traditionally expected males, not females, to continue their education. Subsequently, parental awareness may tend to become a more important factor for females in determining their educational plans because it can help override society's expectations.

In conclusion, the model presented in Figure 3, in which parental awareness is added as an intervening variable, has slightly increased the variance which could be explained in educational plans. At this point the argument is advanced by the inclusion of yet another intervening variable, parental encouragement.

PARENTAL AWARENESS AND PARENTAL ENCOURAGEMENT AS INTERVENING VARIABLES

In this section an attempt is made to present a model with even greater explanatory power, by including parental encouragement as a second intervening variable. Children must perceive not only that parents are aware of their schoolwork, but that parents are actively involved in it. It has been established in the literature that parental encouragement is an important variable influencing educational plans. Cherry (1974), for instance, reported on a British longitudinal study of 5,362 people who were followed from birth in 1946 to 1971. The study found that parental promotion of secondary education was a critical determinant of children's educational achievement.

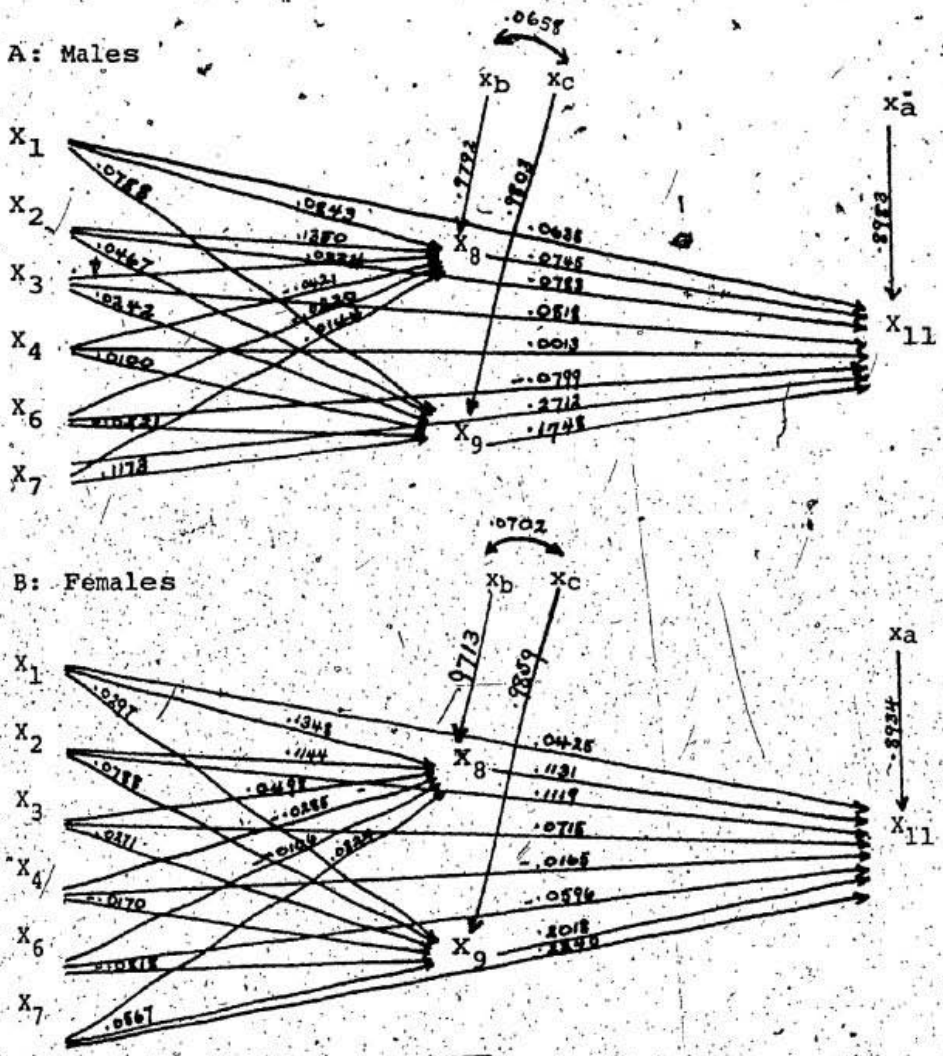
Furthermore, it has been shown that the level of parental encouragement is affected by a number of family variables. For example, it has been found that better educated parents, unlike more poorly educated parents, encourage their children to take courses which will enable the children to go on to higher education (Porter et al., 1973). Parents with middle class occupations encourage the reading of books, studying rather than indulging in other activities, and thinking in the long-term rather than the short-term (Finlayson, 1971); and parents of smaller families more frequently encourage their children to continue beyond high school than do parents of larger families (Rehberg and Westby, 1967). Similarly, as Porter (1974:304) noted

"significant others"... relate to a boy on the basis of their perception of his mental ability ...", suggesting that the level of parental encouragement may also be dependent upon the child's IQ.

Thus, in the model shown in Figure 4, parental awareness and parental encouragement are both entered as intervening variables between selected family characteristics and educational plans. As previously mentioned when discussing the measurement of the parental awareness variable, parental encouragement is also measured through the children's responses. However, it should be reiterated that the children's perception of their parents' encouragement may be the more important aspect affecting the children's educational plans, not the actual level of parental encouragement.

For males, Figure 4 explains 19 per cent of the variance in educational plans, and for females it explains 20 per cent of the variance. This is an increase in explanatory power of 37 per cent for the males, and 25 per cent for the females. This increase may be attributed to the introduction of the parental encouragement variable. In fact, for both males and females parental encouragement has the second largest direct effect of all the independent variables upon educational plans (.1748, males, and .2018, females).

For males, the child's IQ variable (.2712) continues to have the largest effect of any of the independent variables



Variable identifications are: X_1, Father's education; X_2, Mother's education; X_3, Father's occupation; X_4, Mother's occupational status; X_6, Family size; X_7, Child's IQ; X_8, Parental awareness; X_9, Parental encouragement; X_{11}, Educational plans; X_a, Residual effects on educational plans; X_b, Residual effects on parental awareness; X_c, Residual effects on parental encouragement.

FIGURE 4. Path Coefficients for the Effects of Selected Family Characteristics on Educational Plans, Intervening Through Parental Awareness and Parental Encouragement

upon educational plans, and mother's education (.0783) has the third largest effect. Most of the direct effects are decreased in magnitude from those of the previous two models. Even the mother's occupational status variable, which actually increased in effect when parental awareness was introduced as an intervening variable, is now decreased by 72.3 per cent. The father's education parameter is decreased 23.9 per cent; the family size parameter is decreased 14.2 per cent; the mother's education parameter is decreased 11.6 per cent; and the father's occupation parameter is decreased 10.5 per cent. The child's IQ parameter is increased 31.8 per cent. The direct effect of parental awareness is decreased 19.4 per cent from .0924 in the previous model to .0745 in the present model. This decrease indicates that parental awareness may have included both parental awareness and parental encouragement in the previous model. Thus, the inclusion of parental encouragement in the present model may provide a better representation of reality.

For males, IQ has the largest effect upon parental encouragement (.1173) followed by father's education (.0788), family size (-.0521), mother's education (.0467), father's occupation (.0242), and mother's occupational status (.0100). Only family size has a negative effect upon parental encouragement.

For females, most of the direct effects of the independent variables upon educational plans are decreased in magnitude from those of the previous model. Child's IQ

(.2240) increased 21.17 per cent in effect from that of the previous model, continues to have the largest effect upon females' educational plans. Parental awareness (.1131) has the third largest effect, although decreased in effect by 12.4 per cent. The family size parameter is decreased 23.4 per cent; the mother's occupational status parameter is decreased 17.1 per cent; the mother's education parameter is decreased 17.1 per cent; the father's education parameter is decreased 10.0 per cent; and, the father's occupation parameter is decreased 8.1 per cent.

For females, it is interesting that family size (-.0818) has the largest effect upon parental encouragement, followed by mother's education (.0788), child's IQ (.0567), father's education (.0297), father's occupation (.0271), and mother's occupational status (-.0170). Both family size and mother's occupational status have negative effects upon parental encouragement for females.

It is interesting to find that mother's education appears to be more important than father's education for both males and females. It may be that, in a traditionally structured home, children spend more time with their mothers than with their fathers, and subsequently, their mothers' attitudes, behaviors, etc. may have a greater impact on the children than those of the father.

Presented in Table 7 are the indirect effects of selected family characteristics on educational plans as they intervene through parental awareness and parental encouragement.

TABLE 7

Indirect Effects of Selected Family Characteristics on Educational Plans, Intervening Through Parental Awareness and Parental Encouragement

Indirect Through	Father's Education	Mother's Education	Father's Occupation	Mother's Occ. Status	Family Size	Child's IQ
A: Males						
X_8	.0063	.0101	.0025	-.0031	-.0061	.0011
X_9	.0214	.0127	.0066	.0027	-.0142	.0319
B: Females						
X_8	.0152	.0129	.0056	-.0032	-.0012	.0037
X_9	.0067	.0177	.0061	-.0039	-.0183	.0127

Variable identifications are: X_8, Parental awareness; X_9, Parental encouragement.

The indirect effects through parental awareness are generally weak for both males and females. For both, parental education seems to have the largest indirect effects on educational plans: father's education (males .0063, females .0152), and mother's education (males .0101, females .0129). Mother's occupational status (males -.0031, females -.0032), father's occupation (males .0025, females .0056), family size (males -.0061, females -.0012), and child's IQ (males .0011, females .0037) all show weak effects on educational plans as they intervene through parental awareness.

The indirect effects through parental encouragement are also generally weak for both males and females. For females, the indirect effects of family size (-.0183), mother's education (.0177) and IQ (.0127) are more important than those of father's education (.0067), father's occupation (.0061), and mother's occupational status (-.0039). For males, the indirect effects of IQ (.0319), father's education (.0214), and family size (-.0142) are more important than those of mother's education (.0127), father's occupation (.0066) and mother's occupational status (.0027).

Table 8 presents the unstandardized regression coefficients for the effects of selected family characteristics, parental awareness, and parental encouragement on the educational plans of both males and females. Mother's education has a larger effect on the educational plans of females (.5284) than on the educational plans of males (.4114). Furthermore, father's education has a larger effect on males'

TABLE 8

Unstandardized Regression Coefficients for the Effects of Selected Family Characteristics, Parental Awareness, and Parental Encouragement on Educational Plans

	Father's Education	Mother's Education	Father's Occupation	Mother's Occ. Status	Family Size	Child's IQ	Parental Awareness	Parental Encouragement
Males	.3363	.4114	.1242	.0118	-.3755	.4241	.2147	1.6563
Females	.2061	.5284	.1616	-.1407	-.2678	.4802	.3238	1.4923

educational plans (.3363) than on females' educational plans (.2061). This seems to support previously discussed like-sex modeling theories.

As in the previous model, father's occupation continues to show up as more effective in promoting high educational plans for females (.1616), than for males (.1242). It has already been suggested that fathers who have higher status occupations may be more exposed to the idea of female higher education than may be fathers of lower status occupations. Males, however, may be encouraged to pursue higher education no matter what the occupation of the father.

Similarly, mother's occupational status continues to have a slightly positive effect on males' educational plans (.0118), and a stronger and negative effect on females' educational plans (-.1407). The negative effect on educational plans of females may be attributable to a male-dominated labour force which still does not completely support working mothers. Thus, these working mothers may be helping to develop a negative attitude in their daughters towards the value of education and careers.

Family size is slightly more important for males (-.3755) than for females (-.2678), and child's IQ has about the same influence upon educational plans for both males (.4241) and females (.4802).

Parental awareness in this model appears to be more important for females (.3238) than for males (.2147). The same relationship was found in the previous model. Parental

encouragement, on the other hand, has a similar and significant influence for both groups. For males, its influence is 1.6563 and for females, its influence is 1.4923.

Another feature of this model are the correlated residuals r_{bc}. An understanding of the meaning of these residuals may provide an additional interpretation of this model. If the residuals are not highly correlated, it is suggested that the variables are separate and independent. This seems to be the case with parental awareness and parental encouragement because, for males, the correlation coefficient between the two variables is only .0658, and for females, the correlation coefficient is only .0702. Thus, it may be assumed that the parental awareness and parental encouragement variables are separate and independent.

In conclusion, this model which includes both parental awareness and parental encouragement as intervening variables provides a better explanation of the effects of selected family characteristics upon educational plans than either of the two previous models. Now, in a final model, one more intervening variable will be added. Along with parental awareness and parental encouragement, parental decision-making will be included. Also, one more independent variable, parental presence, will be added to the final model.

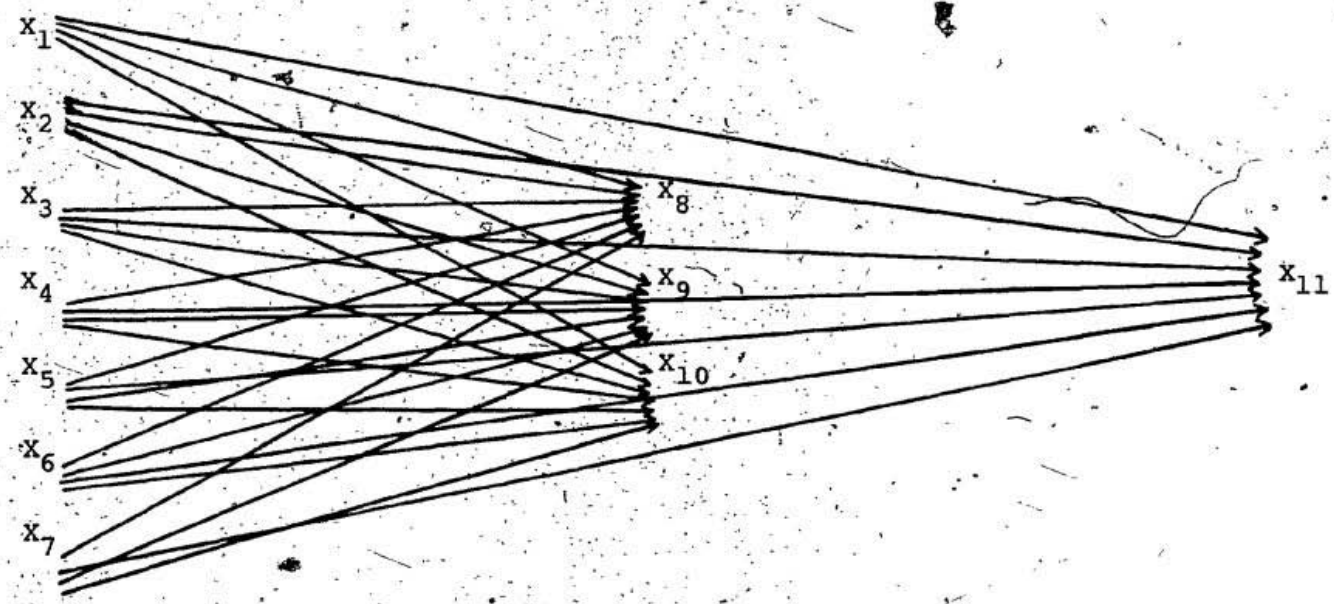
THE EXTENDED MODEL

In an attempt to provide a better representation of reality, a parental decision-making variable was introduced to the final model. Whether one or two parents make most decisions may be an important, but poorly studied, value orientation which could have a significant bearing upon children's educational plans (see, for example, Maccoby, 1962; McCandless, 1971). Furthermore, parental presence in the home was also introduced as a variable in this final model because it is necessary to know the parental presence when considering parental decision-making. The extended model is identical to the theoretical model proposed in Figure 1, Chapter 2.

Introduction of these two variables does not increase the explanatory power of the final model over that of the previous model. This model continues to explain a total of 19 per cent of the variance for males and 20 per cent of the variance for females.

There are a large number of parameters to be reported for the extended model, and a lack of adequate space prevents their presentation in figure form, so the results for the extended model are presented in a table. Figure 5 presents the extended model, and Table 9 presents the results for the extended model.

In the extended model the independent variables, in order of their direct effects upon males' educational



Variable identifications are: X_1, Father's education; X_2, Mother's education; X_3, Father's occupation; X_4, Mother's occupational status; X_5, Parental presence; X_6, Family size; X_7, Child's IQ; X_8, Parental awareness; X_9, Parental encouragement; X_{10}, Parental decision-making; X_{11}, Educational plans.

FIGURE 5. The extended Model

TABLE 9

Path Coefficients for an Extended Model of the Effects of Selected Family Characteristics on Educational Plans, Intervening Through Parental Awareness, Parental Encouragement, and Parental Decision-making

A: Males

Variable	Parental Awareness	Parental Encouragement	Parental Decision-making	Educational Plans	Residuals
X_1	.0809	.0782	-.0100	.0621	
X_2	.1341	.0465	.0272	.0788	
X_3	.0263	.0228	.0481	.0503	
X_4	-.0369	.0109	-.0206	.0027	
X_5	.0771	.0148	.3845	.0391	
X_6	-.0243	-.0525	-.0397	-.0818	
X_7	.0116	.1167	.0067	.1739	
X_8				.0739	.8976
X_9				.2717	.9763
X_{10}				-.0249	.9880

Variable identifications are: X_1, Father's education; X_2, Mother's education; X_3, Father's occupation; X_4, Mother's occupational status; X_5, Parental presence; X_6, Family size; X_7, Child's IQ; X_8, Parental awareness; X_9, Parental encouragement; X_{10}, Parental decision-making pattern.

Table 9 (cont'd.)

B: Females

Variable	Parental Awareness	Parental Encouragement	Parental Decision-making	Educational Plans	Residuals
X_1	.1341	.0295	.0025	.0492	
X_2	.1120	.0783	.0067	.1123	
X_3	.0412	.0253	-.0188	.0729	
X_4	-.0217	-.0156	-.0442	-.0161	
X_5	.0790	.0166	.5290	-.0210	
X_6	-.0086	-.0813	-.0257	-.0593	
X_7	.0344	.0571	.0214	.2011	
X_8				.1108	.8931
X_9				.2232	.9681
X_{10}				.0257	.8477

Variable identifications are: X_1, Father's education; X_2, Mother's education; X_3, Father's occupation; X_4, Mother's occupational status; X_5, Parental presence; X_6, Family size; X_7, Child's IQ; X_8, Parental awareness; X_9, Parental encouragement; X_{10}, Parental decision-making pattern; X_a, Residual effects on educational plans; X_b, Residual effects on parental awareness; X_c, Residual effects on parental encouragement; X_d, Residual effects on parental decision-making pattern.

plans, are: parental encouragement (.2717), child's IQ (.1739), family size (-.0818), mother's education (.0788), parental awareness (.0739), father's education (.0621), father's occupation (.0503), parental presence (.0391), parental decision-making (-.0249) and, mother's occupational status (.0027).

For males, the extended model confirms and extends the findings of the three previous models. Parental encouragement (.2717) appears to have the largest direct effect upon educational plans, followed in effect by the child's IQ (.1739). This was seen in previous models as well, and suggests that if one were to rely on only one or two indicators which may determine a boy's educational plans, these two variables would be the best indicators to examine.

Furthermore, as in Figures 3 and 4, family size (-.0818) is the third largest familial indicator of educational plans, after parental encouragement and child's IQ. As family size increases, the same amount of time and money resources must be divided among more people. Consequently, each child may receive less attention and less encouragement, and educational goals may lower.

In this final model, mother's education (.0788) continues to exert a larger influence upon males' educational plans, than does father's education (.0621). It may be that because of the traditional homemaking role of Newfoundland women, mothers may spent more time than fathers with their children. Thus, the mothers' knowledge and attitudes, molded

by their own educations, may be more readily transmitted to their sons, and may in turn affect their sons' educations.

Of the intervening variables examined, parental encouragement (.2717) is the most important, parental awareness is less important (.0739), and parental decision-making shows the least importance (-.0249). However, while parental encouragement and parental awareness exert positive influences, parental decision-making pattern exerts a negative influence on the educational plans of males. That is, for males, educational plans are lower when both parents make the decisions, and higher when only one parent makes the decisions. Boys who were at high school age when these data were collected grew up in a era when it was common for the father to make major decisions concerning the family (Elder and Bowerman, 1963). By the time the boys reached high school, a trend towards more equalitarian decision-making had started. A possible explanation may be that these boys preferred the system with which they had grown up, and thus could best define their educational goals when only one parent, probably the father, was collaborating in the ultimate educational decision.

For males, father's occupation (.0503) and parental presence (.0391) are relatively less important than parental education and parental awareness and encouragement. It may be that fathers of most occupational statuses want their sons to equal, or surpass, them in education in order to do well in the traditional male economic role.

Similarly, whether there is one parent or two parents present in the home is not especially important in affecting educational plans (.0391), as sons have traditionally been expected, by both mothers and fathers, to attain an adequate education and to fulfill their traditional economic role in family life. However, the weak positive effect of parental presence does indicate that goals are higher when two parents are in the home.

Finally, mother's occupational status is of least importance in effecting males' educational plans (.0027). Again, the traditional expectations placed upon the male to succeed may explain this. These expectations which are placed on males may remain consistent whether the mother works at home or outside the home. The very slight positive influence might suggest that mothers who become more familiar with the labour force may more strongly feel the need for their sons to be well educated than mothers who work in the home.

With the introduction of parental presence and parental decision-making into this final model, five parameters which were previously examined in Figure 4 for males, are now decreased in magnitude. The child's IQ parameter has decreased 0.5 per cent from .1748 to .1739; and, the father's occupation, father's education, parental awareness, and parental encouragement parameters have all decreased less than three per cent each.

On the other hand, in this final model, three parameters are increased in strength for males. The mother's occupational status parameter has increased 51.9 per cent from .0013 to .0027; the family size and mother's education parameters have both increased less than three per cent. These increases in magnitude in the parameters of mother's occupational status, family size, and mother's education may indicate that when parental presence and parental decision-making are not included in the model, the real effects of these three variables are suppressed.

In this extended model, the independent variables in order of their direct effects on females' educational plans are: parental encouragement (.2232), child's IQ (.2011), mother's education (.1123), parental awareness (.1108), father's occupation (.0729), family size (-.0593), father's education (.0429), parental decision-making (.0257), parental presence (-.0210) and mother's occupational status (-.0161).

For females, as for males, the extended model confirms and extends the findings of the three previous models. Parental encouragement (.2232) is shown to have the largest direct influence upon educational plans, followed by the child's IQ (.2011). Mother's education (.1123) has the third largest effect on females' educational plans. This is considerably larger than the effects of father's education (.0429). To reiterate a point made earlier, mothers may spend more time with their children than fathers do, and subsequently, the mothers' behaviors, as shaped by their

educational backgrounds, may have more of an impact upon their daughters.

Parental awareness (.1108) has the fourth largest effect upon females' educational plans. This is less important than the effect of parental encouragement (.2232), but more important than the effect of parental decision-making (.0257). It is probable that the intervening variable, parental awareness, is more important than the variable parental decision-making because it is more directly related to schoolwork. That is, in measuring parental awareness for the present study, the child was asked how much his or her parents knew about the child's schoolwork. On the other hand, in measuring parental decision-making, the child was asked who makes the decisions in the family. There was no specification of what the decisions were about.

Father's occupation (.0729) has the fifth largest direct effect on females' educational plans. It was noted when discussing males' educational plans that fathers of most occupational statuses may want their sons to attain a good education in order to fulfill future economic roles in the family. On the other hand, not all fathers may feel the same way about their daughters attaining higher education. In fact, the effects of father's occupation on females' educational plans suggests that as a father's occupational status decreases, the less likely he is to promote education for his daughter. It may be that fathers of lower status occupations are more traditional in their outlooks and thus,

while recognizing the importance of education for males, may not be exposed to ideas which would make them recognize the value of education for females who have traditionally been homemakers. Consequently, father's education does become an important variable affecting females' educational plans.

Family size (-.0593) is relatively lower in effect than many of the other independent variables. It may be that, while such variables as parental education and father's occupation help determine parental attitudes towards female higher education, a variable such as family size may not be as important in determining such attitudes. Consequently, the relationship between family size and educational plans will be smaller.

The parental decision-making parameter of .0257 while low, indicates that females' educational plans are higher when both parents make the major decisions in the family. In Newfoundland, mothers have traditionally been homemakers, and major decision-making has been left to the father. However, with an increased awareness of female abilities and rights, more mothers are taking active roles in family decision-making and may be subsequently promoting their daughters' abilities. As a result daughters, both through example and through encouragement, may decide to pursue higher education.

The negative influence of parental presence (-.0210) indicates that females' educational plans are higher when

one parent is in the home, although the effect is quite weak. It may be that when one parent is lost through marital separation or death, the views originally shared on female education are kept by the single parent. Thus, whether there are one or two parents in the home may have little bearing on the attitudes expressed by a parent on the educational goals of his or her daughter. However, the weak negative effect does suggest that one parent may be a better source of support and encouragement, because one parent may realize the necessity of being economically independent and may thus encourage daughters to pursue education in order to be qualified to enter the labour force.

Finally, mother's occupation is of least significance in affecting the educational plans of females (-.0161). Although its influence is small, the negative direction of its influence is interesting. It indicates that females' educational plans are higher when the mother works in the home. It may be that Newfoundland homemakers of the 1960's thought of education as a desirable goal without seriously considering the struggle for their daughters to achieve in a male-dominated labour force.

For females, with the introduction of these two new variables, there are five parameters which have decreased in magnitude from that of the previous model. The mother's occupational status, parental awareness, family size, child's IQ, and parental encouragement parameters are all decreased less than three per cent.

However, three parameters have increased in magnitude. The father's occupation, father's education, and mother's education parameters are all increased less than three per cent. These changes in magnitude may indicate that the inclusion of the parental presence and parental decision-making variables provide a better model of the way things are in reality.

In the extended model, none of the residuals for the intervening variables are highly correlated. The correlations between parental awareness and parental encouragement (males .0649, females .0691), between parental encouragement and parental decision-making (males .0718, females .1351), and between parental awareness and parental decision-making (males -.0005, females .0500) all indicate that the variables are separate and independent.

The high residual effects on educational plans for males (.9175) and for females (.8477) point to the fact that even though the effects of selected family characteristics account for eight and fifteen per cent of the variance in males' and females' educational plans, respectively, there is still considerable variance which is unexplained by the present model.

Table 10 presents the indirect effects of the independent variables intervening through parental awareness, parental encouragement, and through parental decision-making.

For males, the indirect effect of each independent variable is larger when the intervening variable is parental encouragement, and is second largest when the intervening

TABLE 10

Indirect Effects of Selected Family Characteristics on Educational Plans Intervening Through Parental Awareness, Parental Encouragement, and Parental Decision-Making

	Father's Education	Mother's Education	Father's Occupation	Mother's Occ. Status	Parental Presence	Family Size	Child's IQ
A: Males							
Parental Awareness	.0060	.0099	.0019	-.0027	.0057	-.0018	.0009
Parental Encouragement	.0212	.0126	.0062	.0030	.0040	-.0142	.0315
Parental Decision-making	-.0003	-.0007	-.0012	-.0005	-.0096	-.0010	-.0002
B: Females							
Parental Awareness	.0149	.0124	.0046	-.0024	.0088	-.0010	.0038
Parental Encouragement	.0066	.0175	.0056	-.0035	.0037	-.0182	.0127
Parental Decision-making	.0001	.0002	-.0005	.0011	.0135	-.0007	.0006

variable is parental awareness. Only the parental presence variable differs. The indirect effect of parental presence intervening through parental decision-making is -.0096, through parental awareness is .0057, and through parental encouragement is .0040.

Another interesting thing about the indirect effects of the independent variables for males is that, except for mother's occupational status and family size, the indirect effects are mostly positive when the intervening variables are parental awareness and parental encouragement, and negative when the intervening variable is parental decision-making. The indirect effect of mother's occupational status (-.0027) is negative when intervening through parental awareness, and the indirect effect of family size is negative when intervening through parental awareness (-.0018) and through parental encouragement (-.0142).

For males, the largest indirect effect is that of child's IQ intervening through parental encouragement (.0315) and the smallest indirect effect is that of child's IQ intervening through parental decision-making (-.0002).

For females, as for males, the indirect effect of each independent variable is larger when the intervening variable is parental encouragement, and is second largest when the intervening variable is parental awareness. Furthermore, only the parental presence variable differs. The indirect effect of parental presence intervening through parental decision-making is .0135, through parental awareness

is .0088, and through parental encouragement is .0037.

Most of the indirect effects are positive. Again, as has been the case throughout this study, family size has a negative effect as it intervenes through parental awareness (-.0010), through parental encouragement (-.0182), and through parental decision-making (-.0007). Also, the indirect effects of mother's occupational status as it intervenes through parental awareness (-.0024), and through parental encouragement (-.0035) are negative; and, the indirect effect of father's occupation as it intervenes through parental decision-making (-.0005) is negative.

For females, the largest indirect effect is that of family size intervening through parental encouragement (-.0182), and the smallest indirect effect is father's education intervening through parental decision-making (.0001).

Table 11 presents the unstandardized regression coefficients for the extended model. Comparing the two groups, it can be seen that trends which were evident in the previous model, persist in this extended model. That is, mother's education is more important for females (.5302) than for males (.4137), and father's education is more important for males (.3286) than for females (.2077). While this suggests like-sex modeling, it is interesting that mother's education is more important than father's education for both groups (Table 9). As suggested before, the values which a mother holds as a result of her educational experiences, may

TABLE 11

Unstandardized Regression Coefficients for the Effects of Selected Family Characteristics, Parental Awareness, Parental Encouragement, and Parental Decision-Making on Educational Plans

	Father's Education	Mother's Education	Father's Occupation	Mother's Occ. Status	Parental Presence	Family Size	Child's IQ	Parental Awareness	Parental Encouragement	Parental Decision-Making
Males	.3286	.4137	.1206	.0252	.4392	-.3844	.4220	.2129	1.6537	-.0984
Females	.2077	.5302	.1648	-.1372	-.2253	-.2661	.4787	.3171	1.4869	.1036

strongly influence her children during the time which she spends with them.

Family size continues to exert a negative influence on the educational plans of both males (-.3844) and females (-.2661). This is to be expected because as family size increases, the amount of time and money resources must be divided among more people. The help and encouragement which help foster high educational goals may be subsequently reduced.

Males' educational plans are affected positively by mother's occupational status (.0252) and parental presence (.4392). On the other hand, females' educational plans are affected negatively by mother's occupational status (-.1372) and parental presence (-.2253). Parental decision-making affects males' educational plans negatively (-.0984), and females' educational plans positively (.1036). Thus, these comparisons suggest that there may be differential treatment, by sex, in the home. These differences were discussed earlier when examining the standardized regression coefficients. At that time it was suggested that mothers who worked at home during the 1960's may have promoted education for their daughters as a desirable goal, whereas mothers who worked outside the home may have accepted the importance of education for their sons, but may not have been eager to promote education which would have enabled their daughters to enter a male-dominated labour force which did not completely support working mothers. Furthermore, it was

suggested that, while females may benefit from the example of both parents sharing decision-making, males may be more comfortable with the traditional mode in which the father makes most decisions. In addition, it was proposed that when there is only one parent in the home, that parent, because of his or her own experience, may transmit the value of independence and the need for education to a daughter. On the other hand, a son might benefit better from the presence of two interested parents.

Father's occupation (males .1206, females .1648), child's IQ (males .4220, females .4787), and parental awareness (males .2129, females .3171) are more important for females than they are for males, while parental encouragement (males 1.6537, females 1.4869) is more important for males than it is for females. It is probable that IQ is an important variable for females in their setting of educational goals because, traditionally, a female may have had to be exceptionally bright in order to be considered a candidate for higher education. Similarly, father's occupation may be an important variable for females because, traditionally, lower status fathers may not have accepted higher education for women, and some of this attitude may still persist today.

Parental encouragement, however, may not be as important for females as for males because females of the 1960's may have been just beginning to question women's rights and may not have depended completely on their parents to encourage them in the direction

take. Males, on the other hand, may not have questioned parental encouragement as readily.

This chapter has contained the findings of four models: a basic model, a model in which parental awareness is added as an intervening variable, a model in which parental encouragement is added as an intervening variable, and finally, an extended model. In the next chapter, Chapter 5, a summary of the study, implications of the study, and suggestions for further research, are presented.

CHAPTER 5

CONCLUSION

In concluding this study a summary of the purpose and findings of the study is presented. The implications of the findings are discussed, and suggestions for further research are proposed.

SUMMARY

The present study was concerned with how selected family characteristics intervene through parental value orientations to influence children's educational plans. A sample of 38 Newfoundland secondary schools was examined. Included in the sample were 3,315 females and 3,500 males in Grades 9, 10, 11, 12 and vocational schools.

The effects of the following seven family characteristics on children's educational plans were analyzed: father's education, mother's education, father's occupation, mother's occupational status, parental presence, family size, and child's IQ. Furthermore, the effects of these seven family characteristics were analyzed as they intervene through the following three value orientations: parental awareness, parental encouragement, and parental decision-making.

In the final analysis, 19 per cent of the variance was explained in the educational plans of males, and 20 per

cent of the variance in the educational plans of females. The analyses of this study indicated that child's IQ is consistently an important indicator of a child's educational plans, and that parental encouragement is a significant intervening variable. Also, three variables were shown to act in opposite directions for males and females. Mother's occupational status affected males' educational plans positively and females' educational plans negatively; parental presence affected males' educational plans positively and females' educational plans negatively; and, finally, parental decision-making affected males' educational plans negatively and females' educational plans positively. That is, males' educational plans were higher when the mother worked outside the home, whereas females' educational plans were higher when the mother worked in the home; males' educational plans were higher when there were two parents in the home, whereas females' educational plans were higher when there was only one parent in the home; and finally, males' educational plans were higher when only one parent made most decisions, whereas females' educational plans were higher when two parents made most decisions.

Furthermore, mother's education was more important than father's education in the setting of high educational goals for both males and females. However, mother's education was more important for females than for males, and father's education was more important for males than for females. As for father's occupation, while it positively affected

the educational plans of both males and females, it was more important for females than it was for males.

Family size, as expected, negatively affected the educational plans of both males and females. Finally, parental awareness was more important for females than for males.

IMPLICATIONS OF THE STUDY

The present study may be important because it has identified family characteristics which may aid or hinder children in their setting of realistic educational goals. In the introduction to the study it was proposed that when certain family characteristics are identified, programs of information and assistance may be initiated to promote particular traits or behaviors. In this regard, six significant implications concerning the interaction of parents and children in the home, and teachers and children in the school, are now discussed.

First, mother's education was shown to be more important than father's education in influencing the educational plans of both males and females. As mother's education increases, children's educational plans increase. Since mothers traditionally spend more time with their children than do fathers, then the mother's attitudes and expectations are probably influencing the children more than those of the father. There may be an important implication here for Newfoundland high schools, vocational schools, and

university to provide convenient courses for mothers to continue their educations. To educate mothers would be an investment in the future, rather than an expenditure.

Second, the findings of the present study have implications for the one-parent family. With increased societal acceptance of the single-parent family, one-parent families are becoming more common. This study found that males' educational plans are higher when there are two parents in the family, whereas females' educational plans are higher when there is only one parent in the family. For females, this is true even when parental awareness, parental encouragement, and parental decision-making are included as intervening value orientations between parental presence and educational plans. It may be that having only one parent may promote independence and self-reliance in a female. The daughter may observe the demands made upon a single parent and may come to value self-dependence both as an immediate goal and as a future insurance in the case of the loss of a spouse. Furthermore, the daughter in a one-parent family may be required to assume greater responsibility in the household, and through that means may develop self-reliance.

On the other hand, having only one parent may have detrimental effects on the development of males' educational plans. It may be that in a traditional two-parent family unit, a son is encouraged to pursue higher education in order to fulfill the traditional male economic role. However,

a one-parent family unit is not traditional, and may not promote the same traditional outlook in children. Since paternal absence is most common in a one-parent family (Herzog and Sudia, 1968), a one-parent family usually has a female head. A son in such a one-parent family may be required to fulfill many roles. In doing so he may acquire competence in some of the more traditionally-female roles, while modeling some of his attitudes and behaviors after his mother's attitudes and behaviors. The son's value for higher education may be diminished when he no longer sees a traditional male economic role as the only option for the future. Thus, the implication here points to the importance of such organizations as the Big Brother organization. If a boy's educational plans are lowered in a one-parent family, and if the parent is usually female, then groups which involve the boy with other boys and men may be beneficial.

Third, a number of important differences were found when males and females were compared on the same variables. Father's education, the number of siblings in the family, the number of parents in the home, and the parents' encouragement were found to be more important for males than for females. On the other hand, mother's education, father's occupation and mother's occupational status, child's IQ, parental awareness, and parental decision-making were found to be more important for females than for males.

If indeed, as these findings suggest, males and females are being treated differently, then parents should

be made aware of the ways in which they are influencing their sons' setting of high educational goals, and the ways in which they are influencing their daughters' setting of high educational goals. They might then try to use their influence to the advantage of both sons and daughters. If sex roles are changing, both males and females must be educated to deal with the changes and to adapt successfully.

For instance, parental expectations has been found to be a more important influence for males than for females, and parental awareness to be a more important influence for females than for males. Educators, understanding this, could encourage parents to notice males' work more and to encourage females more. Having received more equalized treatment at home, children might then go to school and on to higher education and jobs expecting, and in some cases, demanding, the same sort of treatment and opportunities.

A fourth implication of the present study is that, in addition to trying to equalize their attitudes and behavior regarding education for both sons and daughters, parents should generally provide more encouragement to both. Parental encouragement was found to be the single most important family variable affecting the educational goals of children. Unlike family size, child's IQ, et cetera, which are variables which are difficult to affect, parental encouragement is a variable which may be introduced to, or increased in, a home at any time. This may be one of the

more important implications of this study for educators because they are often in a position to bring the need for parental encouragement to the attention of parents.

Fifth, as already discussed, the differential effects of selected family characteristics on the educational plans of males and females implies the persistence of differential treatment of the sexes in the home. Since this study is concerned with students at the secondary school level, it may be assumed that the school has not been effective in counteracting parents' sexist childrearing attitudes. The school is a major institution of society and it is in this system that the elimination of differential treatment of the sexes must be implemented. One important way in which this may be done at the secondary school level is through career awareness programs. Whereas society now endorses the right of females to do jobs which have traditionally been male tasks, society does not look as favorably upon males who wish to do jobs which have traditionally been female tasks. For instance, although it has yet to be confirmed through empirical research, society may be more tolerant of female medical doctors than it is of male nurses. The school has a responsibility to supply information about a wide variety of occupations to both male and female students, and furthermore, to encourage and support children to choose further education and occupations which suit them as individuals rather than which have traditionally been suitable for their respective sexes. In addition, if educators make

an effort to become aware of how they themselves stereotype the sexes, and if they make an effort to eliminate unfair treatment, they may then assist in programs to help make parents aware of unfair sex stereotyping treatment of their children.

Sixth, the present study points to a need to involve parents in the educational process. The selected family characteristics and value orientations of this study account for 19 per cent of the variance in educational plans for males and 20 per cent of the variance for females. If, for example, father's occupation acts such that, as father's status increases, parental awareness and encouragement and, ultimately, the child's educational plans increase, then it is important for educators to know this and to help low status fathers to appreciate the importance of education for their children. This may be especially true for lower status fathers of females. Such fathers may not be exposed to ideas in their work milieu which are conducive to promotion of higher education for females. If the schools attempt to educate children without the positive involvement of parents, they will be unable to educate children to the optimum level.

SUGGESTIONS FOR FURTHER RESEARCH

Three suggestions for further research are made. The first concerns the sample, the second concerns the method of analysis, and the third concerns the measurement of the variables.

First, secondary school students were included in the present study. The use of secondary school students may have provided a biased indication of the effects of parental encouragement because those students who received little or no parental encouragement may have already dropped out of school. It may be better to employ a younger sample in any future research. If it is shown that parental encouragement begins influencing children's educational plans early in their schooling, then intervention programs to involve parents should start at that stage, and not at the secondary school level.

Second, it may be beneficial in further research to examine the effects of these selected family characteristics for each grade, rather than to examine the combined data. As pointed out when discussing the limitations of the present study, certain family characteristics may influence children differently at different points in time. Family influences may be strong during the beginning years of secondary schooling, but as children approach the time when they will be leaving home for further education and for jobs, children may tend to look to their peers for support. When they leave home they will have to depend on other people besides their parents, and realizing this, older secondary school children may become more involved with their friends.

Third, some of the variables could be measured in more detail in any future studies. For instance, mother's

occupational status was measured in the present study by responses to the question, "Does your mother work outside the home?" This question does not help measure how long the mother has been working outside the home, the type of work which she does, or whether her job is part-time or full-time.

Similarly, some of the variables could be more accurately measured in future studies. Parental encouragement, for example, was measured through response to a composite of the following two questions: "How far do your parents want you to go in school?" and "Do your parents want you to continue your education after high school?" It might be better measured by responses to a question which directly asks about the level of parental encouragement.

REFERENCES

Almquist, E.M. and S.S. Angrist
1971 "Role Model Influences on College Women's Career Aspirations". Merrill-Palmer Quarterly 17: 263-279.

Anchor, Kenneth N. and Felicia N. Anchor
1974 "School Failure and Parental Involvement in an Ethically Mixed-School: A Survey". Journal of Community Psychology 2: 265-267.

Atkinson, Brian R. and Donald G. Ogston
1974 "The Effect of Father Absence on Male Children in the Home and School". Journal of School Psychology 12: 213-221.

Bach, G.R.
1946 "Father-Fantasies and Father-Typing in Father-Separated Children". Child Development 17: 63-80.

Banducci, R.
1967 "The Effects of Mother's Employment on the Achievement, Aspirations, and Expectations of the Child". Personnel and Guidance Journal 46: 263-267.

Barclay, J.R., W.E. Stilwell and L.K. Barclay
1972 "The Influence of Parental Occupations on Social Interaction Measures on Elementary School Children". Journal of Vocational Behavior 2: 433-446.

Baruch, G.K.
1972 "Maternal Influences upon College Women's Attitudes Towards Women and Work". Developmental Psychology 6: 32-37.

Baumrind, Diana and A.E. Black
1967 "Socialization Practices Associated with Dimensions of Competence in Preschool Boys and Girls". Child Development 38: 291-327.

Bennett, William S. and Noel P. Gist
1964 "Class and Family Influences on Student Aspirations". Social Forces 43: 167-173.

Biller, H.B.
1971 "The Mother-Child Relationship and the Father-Absent Boy's Personality Development". Merrill-Palmer Quarterly 17: 227-241.

Bird, Florence et al.
1970 Report of the Royal Commission on the Status of Women in Canada. Ottawa: Queen's Printer.

Blalock, Hubert M.
1972 Social Statistics. New York: McGraw-Hill.

Bogie, Donald W.
1976 "Occupational Aspiration-Expectation Discrepancies Among High School Seniors". Vocational Guidance Quarterly 25: 250-255.

Bossard, J.H. and E.S. Boll
1955 "Personality Roles in the Large Family". Child Development 26: 71-78.

Bowerman, Charles E. and Stephen J. Bahr
1973 "Conjugal Power and Adolescent Identification with Parents". Sociometry 36: 366-377.

Breton, Raymond
1972 Social and Academic Factors in the Career Decisions of Academic Youth. Ottawa: Information Canada.

Bulcock, Jeffery W.
1975 Education and the Socioeconomic Career in Sweden: An Overview of Recent Research. Paper prepared for the annual meeting of American Educational Research Association.

Champagne, David W. and Richard M. Goldman
1972 Teaching Parents Teaching. New York: Appleton-Century-Crofts.

Cherry, Nicola
1974 "Components of Occupational Interest". British Journal of Educational Psychology 44: 22-30.

Clausen, John A.
1968 "A Historical and Comparative View of Socialization Theory and Research". In John A. Clausen (ed.) Socialization and Society. Boston: Little, Brown.

Clifton, Rodney A.
1975 An Empirical Evaluation of Three Orientations Towards Teaching: Philetics, Didactics, and Heuristics. Paper read at the annual conference of the Canadian Society for the Study of Education.

Cohen, Elizabeth G.
1965 "Parental Factors in Educational Mobility". Sociology of Education 38: 404-425.

Cohen A. and H. Hodges
1963 "Characteristics of the Lower Blue-Collar Class". Social Problems 10: 303-334.

Crean, John F., Michael M. Ferguson, and Hugh J. Somers
1969 Higher Education in the Atlantic Provinces for the 1970's. Halifax: Association of Atlantic Universities.

Douvan, E.
1963 "Employment and the Adolescent". In F.I. Nye and L.W. Hoffman (eds.), The Employed Mother in America. Chicago: Rand McNally.

Duncan, Otis D.
1966 "Path Analysis: Sociological Examples". American Journal of Sociology 72: 1-16.

Elder, G.H. and C. Bowerman
1963 "Family Structure and Child Reading Patterns: The Effect of Family Size and Sex Composition on Child Rearing Practices". American Sociological Review 28: 891-905.

Etaugh, Claire
1974 "Effects of Maternal Employment on Children: A Review of Recent Literature". Merrill-Palmer Quarterly 20: 71-98.

Farley, Jennie
1974 "Coeducation and College Women". Cornell Journal of Social Relations 9: 87-97.

Finlayson, Douglas S.
1971 "Parental Aspirations and the Educational Achievement of Children". Educational Research 14: 61-64.

Fogarty, Michael P., Rhona Rapoport and Robert Rapoport
1971 Sex, Career, and Family. London: Allen and Unwin.

Ginzberg, E.
1971 Educated American Women: Life-Styles and Self-Portraits. New York: Columbia University Press.

Gordon, Thomas
1973 P.E.T. Parental Effectiveness Training: The Tested New Way to Raise Responsible Children. New York: Wyden.

Gowan, J.C.
1957 "Dynamics of the Underachievement of Gifted Students". Exceptional Children 24: 98-101.

Greenstein, J.M.
1966 "Father Characteristics and Sex Typing". Journal of Personality and Social Psychology 3: 271-277.

Grotberg, Edith H.
1972 "What Does Research Teach Us About Day Care"? Children Today 1: 17.

Haggard, E.A.
1957 "Socialization, Personality, and Academic Achievement in Gifted Children". School Review 65: 388-414.

Hartley, R.E.
1961 "What Aspects of Child Behavior Should be Studied in Relation to Maternal Employment"? In A.E. Siegel (ed.), Research Issues Related to the Effects of Maternal Employment on Children. University Park, Pennsylvania: Social Science Research Center.

Herzog, E. and C. Sudia
1968 "Fatherless Homes: A Review of Research". Children 15: 177-182.

Hess, Robert D. and C. Shipman
1965 "Early Experience and the Socialization of Cognitive Modes in Children". Child Development 34: 869-886.

Hetherington, E.M.
1966 "Effects of Paternal Absence on Sex-Typed Behaviors in Negro and White Pre-Adolescent Males". Journal of Personality and Social Psychology 4: 87-91.

Hoffman, Lois W.
1974 "Effects of Maternal Employment on the Child: A Review of the Research". Developmental Psychology 10: 204-228.

Hood, Albert B.
1967 "Educational and Personality Factors Associated with Unusual Patterns of Parental Education". Journal of Educational Research 61: 32-34.

Hutner, Frances C.
1972 "Mother's Education and Working Effects on the School Child". Journal of Psychology 82: 27-37.

Jackson, Robert M., Naomi M. Meara and Manmohan Anora
1974 "Father Identification, Achievement and Occupational Behavior of Rural Youth". Journal of Vocational Behavior 4: 83-96.

Kagan, Jerome and Howard A. Moss
1962 Birth to Maturity: A Study in Psychological Development. New York: Wiley.

Kerchoff, Alan C.
1972 Socialization and Social Class. Englewood Cliffs: Prentice-Hall.

_____ and Judity L. Huff
1974 "Parental Influence on Educational Goals". Sociometry 37: 307-327.

Kerlinger, F. and E. Pedhazur
1973 Multiple Regression Analysis in Behavioral Research. New York: Holt, Rinehart and Winston.

Kim, J.O. and C.W. Mueller
1976 "Standardized and Unstandardized Coefficients in Causal Analysis" Sociological Methods and Research 4: 423-438.

Kohn, Melvin L.
1969 Class and Conformity: A Study in Values. Homewood: Dorsey.

Lal Chopra, Sukhendra
1966 "Family Size and Sibling Position as Related to Measured Intelligence and Academic Achievement". Journal of Social Psychology 70: 133-137.

Long, Mary Elizabeth
1972 The Educational and Occupational Aspirations and Expectations of High School Students in Newfoundland. Unpublished M.Ed. thesis. St. John's: Memorial University of Newfoundland.

Lynn, D.B. and W.L. Sawrey
1959 "The Effects of Father-Absence on Norwegian Girls and Boys". Journal of Abnormal and Social Psychology 59: 258-262.

Maccoby, E. (ed.)
1966 The Development of Sex Differences. Stanford: Stanford University.

Maccoby, E.
1962 "Class Differences in Boys' Choices of Authority Roles". Sociometry 25: 117-119.

Marsella, Anthony J., Richard A. Dubanoski and Karen Mohs
1974 "The Effects of Father Presence and Absence upon Maternal Attitudes". Journal of Genetic Psychology 125: 257-263.

Maslow, A.H., H. Rand and S. Newman
1960 "Some Parallels Between Sexual and Dominance Behavior of Intra-Human Primates and the Fantasies of Patients

in Psychotherapy". Journal of Nervous and Mental Diseases 131: 202-212.

McCandless, Boyd R.
1967 Children: Behavior and Development. New York: Holt, Rinehart and Winston.

McDill, Edward L. and James Coleman
1965 "Family and Peer Influences in College Plans of High School Students". Sociology of Education 38: 112-126.

Mead, Margaret
1954 And Keep Your Powder Dry. New York: Morrow

Miller, J.L. and M.L. Erickson
1974 "On Dummy Variable Regression Analysis: A Description and Illustration of the Method". Sociological Methods and Research 2: 409-430.

Mischel, W.
1961a "Father-Absence and Delay of Gratification: Cross-Cultural Comparisons". Journal of Abnormal and Social Psychology 63: 116-124.

1961b "Delay of Gratification, Need for Achievement, and Acquiescence in Another Culture". Journal of Abnormal and Social Psychology 62: 543-552.

Nie, Norman H., C. Hadlai Hull, Jean G. Jenkins, Karin Steinbrenner and Dale H. Bent
1970 Statistical Package for the Social Sciences. New York: McGraw-Hill.

Nolan, F.L.
1963 "Effects on Rural Children". In F.I. Nye and L.W. Hoffman (eds.), The Employed Mother in America. Chicago: Rand McNally.

Osborn, Michael E.
1971 "The Impact of Differing Parental Educational Level on the Educational Achievement, Attitude, Aspiration and Expectation of the Child". Journal of Educational Research 65: 163-167.

Otis Lennon Mental Ability Test
1965 Otis Lennon Mental Ability Test, Advanced Form Ac. New York: Harcourt, Brace, and World.

Parsons, Llewellyn
1974 Career Decisions of Newfoundland Youth: Report No. 2

of the Committee on 1973 Enrollment. St. John's: Memorial University.

Parsons, Catherine and Llewellyn Parsons
1976 "Family Size and Career Decisions". Morning Watch 3: 7-11.

Patterson, Gerald R. and M. Elizabeth Gullion
1974 Living With Children. Champaign, Illinois: Research Press.

Pavalko, R.M. and David R. Bishop
1966 "Socioeconomic Status and College Plans: A Study of Canadian High School Students". Sociology of Education 39: 288-298.

Porter, J., Marion R. Porter and Bernard R. Blishen
1973 Does Money Matter? Prospects for Higher Education. Toronto: York University Institute for Behavioral Research.

Porter, J.N.
1974 "Race, Socialization and Mobility in Educational and Early Occupational Attainment". American Sociological Review 39: 303-316.

Powell, K.
1963 "Personalities of Children and Child-Rearing Attitudes of Mothers". In F.I. Nye and L.W. Hoffman (eds.), The Employed Mother in America. Chicago: Rand McNally.

Prenter, Isla L. and R.A. Stewart
1972 "Educational and Vocational Aspirations of New Zealand Adolescent Girls, in Relation to Achievement and Motivation". New Zealand Journal of Educational Studies 7: 38-44.

Rabban, A.
1950 "Sex Role Identification in Young Children in Two Diverse Social Groups". Genetic Psychological Monograph 42: 81-158.

Rehberg, Richard A. and David L. Westby
1967 "Parental Encouragement, Occupation, Education, and Family Size: Artifactual or Independent Determinants of Adolescent Educational Expectations". Social Forces 45: 362-374.

Rieber, M. and M. Womack
1968 "The Intelligence of Preschool Children as Related to Ethnic and Demographic Variables". Exceptional Children 34: 609-614.

Rogers, D.
1972 The Psychology of Adolescence. New York: Appleton-Century-Crofts.

Rosen, B.C.
1961 "Family Structure and Achievement Motivation". American Sociological Review 26: 574-585.

Rosenberg, Morris
1968 The Logic of Survey Analysis. New York: Basic Books.

Roy, P.
1963 "Adolescent Roles: Rural-Urban Differentials". In F.I. Nye and L.W. Hoffman (eds.), The Employed Mother in America. Chicago: Rand McNally.

Sauvy, Alfred
1973 Access to Education: New Possibilities. The Hague: Martinus Nijhoff.

Schwarzweller, Harry K. and Thomas A. Lyson
1974 "Social Class, Parental Interest and the Educational Plans of American and Norwegian Rural Youth. Sociology of Education 47: 443-465.

Sciara, Frank J. and Richard K. Jantz
1974 "Father-Absence and its Apparent Effect on the Reading Achievement of Black Children from Low Income Families". Journal of Negro Education 43: 221-227.

Sewell, W.H., A.O. Haller and M.A. Strauss
1957 "Social Status and Educational and Occupational Aspirations". American Sociological Review 22: 67-73.

———— and V.P. Shah
1968 "Social Class, Parental Encouragement, and Educational Aspirations". American Journal of Sociology 73: 559-572.

Shapiro, Avram H.
1974 "Effects of Family Density and Mother's Education on Preschoolers' Motor Skills". Perceptual and Motor Skills 38: 79-86.

Smith, Nancy F. and Mary K. Grenier
1975 "English- and French-Canadian Children's Views of Parents". Canadian Journal of Behavioral Science 7: 40-53.

Statistics Canada
1973 1971 Census of Canada. Ottawa: Information Canada.

Suits, Daniel B.
1957 "Use of Dummy Variables in Regression Equations". Journal of American Statistical Association 52: 494-502.

Thomas, W.I.
1928 The Child in America. New York: A.H. Knoph.

Tiller, Per Olav
1959 "Attitude Formation, Personality, and Family". Acta Psychologica 16: 316-320.

Tilley, Derek Graham
1975 Determinants of Educational Aspiration: A Study of the Relative Effects of Family Background and School-Related Predictors of the Post-Secondary School Plans of 7000 Grade Eleven Students in Newfoundland and Labrador. Unpublished M.Ed. thesis. St. John's: Memorial University of Newfoundland.

Treiman, Donald J. and Kermit Terrell
1975 "Sex and the Process of Status Attainment: A Comparison of Working Women and Men". American Sociological Review 40: 174-200.

Trowbridge, Norman
1974 "Self-Concept and IQ in Elementary School Children". California Journal of Educational Research 25: 37-49.

Tseng, M.S.
1972 "Comparisons of Selected Familial, Personality and Vocational Variables of High School Students and Dropouts". Journal of Educational Research 65: 462-466.

Turner, Ralph H.
1962 "Some Family Determinants of Ambition". Sociology and Social Research 46: 397-411.

Vogel, S.R., I.K. Broverman, D.M. Broverman, F.E. Clarkson and P.S. Rosenkrantz
1970 "Maternal Employment and Perception of Sex Roles Among College Students". Developmental Psychology 3: 384-391.

Williams, Trevor
1972 "Educational Aspirations: Longitudinal Evidence on Their Development in Canadian Youth". Sociology of Education 45: 107-133.

Woods, M.B.
1972 "The Unsupervised Child of the Working Mother". Developmental Psychology 6: 14-25.

Wright, James D. and Sonia R. Wright
1976 "Social Class and Parental Values for Children: A Partial Replication and Extension of the Kohn Thesis". American Sociological Review 41: 527-537.